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China Report

AGRICULTURE

No. 82



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CONTENTS

I. GENERAL INFORMATION.....	1
National	
Several Proposals Offered on 'Great Green Wall' for Northern China (GUANGMING RIBAO, 30 Jan 80).....	1
Editor's Note Silviculture Forests, by Zhang Qinwen Control Measures, by Li Lianjie Plant Ecology, by Hu Shishi	
Some Policy Questions Concerning Rural Afforestation (NONGCUN GONGZUO TONGXUN, 5 Nov 79).....	10
Importance of Afforestation Work Reported (Zhang Pinghua; NONGCUN GONGZUO TONGXUN, 5 Nov 79).....	13
'JINGJI YANJIU' Urges Increase of Unit Yield (Fang Yuan; JINGJI YANJIU, 20 Mar 80).....	15
New Rice Virus Discovered in Guangdong (NANFANG RIBAO, 11 Dec 79).....	27
Drip Irrigation Promoted Throughout Country (GUANGMING RIBAO, 5 Mar 80).....	29
'RENMIN RIBAO' Commentator on Fighting Natural Calamities (RENMIN RIBAO, 12 Apr 80).....	31

CONTENTS (Continued)

Briefs		
	Tax Rates on Sugar Lowered	35
	Hebei Fish-Breeding	35
Anhui		
Briefs		
	Suxian County Grain Sowing	36
Fujian		
Briefs		
	Fujian Sugar Production	37
Guangdong		
	Tianjin Leader Comments on Spring Farming (TIANJIN RIBAO, 31 Mar 80).....	38
	Sugar Extraction Season Begins in Guangdong (NANFANG RIBAO, 11 Dec 79).....	41
	70 Refineries Start Production by Zhang Zhixiong Sugarcane Delivery Stipulations	
	Panyu County Sets Record Rice Yield (Li Dapei, Li Jianchao; NANFANG RIBAO, 23 Jan 80).....	44
	Qingshou Commune Relates Success in Growing Rice (Zeng Mingou, et al.; NANFANG RIBAO, 21 Jan 80).....	45
	Shaoguan Prefecture's Experience With Hybrid Rice Promising (He Yaochang, et al.; NANFANG RIBAO, 22 Jan 80).....	48
	County Details Success of Newly Rich Brigades (Erkuan, et al.; NANFANG RIBAO, 25 Feb 80).....	50
	Guangdong Areas Relate Efforts To Combat Drought (NANFANG RIBAO, 21 Jan 80).....	52
	Zhanjiang Prefecture, by Shou Shan, Qi Xuan	
	Jiexi County, by Zhang Yuying	
	Editorial Urges Proper Management	
	Qjiang County	

CONTENTS (Continued)

Vigorously Promote Scientific Hog Raising (NANFANG RIBAO, 21 Jan 80).....	55
Pig Raising Contest, by Wen Junzhi, Hong Guang Improving Pig Breeds, by Wu Jiangxiu, Wang Yuting Scientific Pig Raising, by Zhu Weiqiang Editorial Comment	
Freshwater Fish Output 200,000 Tons in 1979 (Meng Jurui, Li Konghua; NANFANG RIBAO, 2 Jan 80)....	58
Guangdong Demands Stop To Excessive Fishing, Urges Conservation (Zhang Zhonghuang; NANFANG RIBAO, 8 Jan 80).....	59
Briefs	
Experimental Field Production	62
Pondfish Kill	62
Dabu County Experimental Fields	63
Guangxi	
Briefs	
Guangxi Sugar Production	64
Heilongjiang	
Briefs	
County Grain Output	65
Raohe County Agricultural Production	65
Lindian County Sugarbeets	65
Nehe County Wheat Acreage	65
Hunan	
Lianyuan Prefecture's Current Farming Situation Described (RENMIN RIBAO, 4 Feb 80).....	66
Jiangsu	
Exchangeable Base of Paddy Soil in Southern Regions Studied (Chen Jiafang, Shao Zongchen; TURANG, Dec 79).....	68
Briefs	
Jiangsu State-Run Enterprises	78

CONTENTS (Continued)

Jiangxi

- Calculation of Price of Grain Rations to Commune Members
Questioned
(Cheng Guangdong; NONGCUN GONGZUO TONGXUN,
5 Nov 79)..... 79
- Cottonfield Cultivation in Jiujiang Prefecture Readjusted
(RENMIN RIBAO, 12 Feb 80)..... 81

Jilin

- Briefs
Hog Procurement..... 82

Nei Monggol

- Briefs
Wheat Sowing..... 83

Qinghai

- Huangzhong County Stresses Preparatory Farming Tasks
(RENMIN RIBAO, 4 Feb 80)..... 84

Shandong

- Ling County Plans Cotton Crop
(RENMIN RIBAO, 4 Feb 80)..... 86
- Briefs
Shandong Science Popularization..... 87
Cotton Advisors..... 87

Shanghai

- Shanghai Busy With Spring Farming
(WENHUI BAO, 21 Mar 80)..... 88
- Briefs
Fertilizer, Farm Chemicals..... 90

CONTENTS (Continued)

Zhejiang

Commune, Brigade Run Enterprises Rapidly Growing (RENMIN RIBAO, 12 Feb 80).....	91
--	----

Briefs

Cottonseed Cake as Feed	92
-------------------------	----

II. PUBLICATIONS..... 93

Table of Contents of 'ZHONGGUO SHOUYI ZAZHI', October 1979 (ZHONGGUO SHOUYI ZAZHI, Oct 79).....	93
--	----

Table of Contents of 'ZHONGGUO SHOUYI ZAZHI', November 1979 (ZHONGGUO SHOUYI ZAZHI, Nov 79).....	95
---	----

Table of Contents of 'ZHONGGUO SHOUYI ZAZHI', December 1979 (ZHONGGUO SHOUYI ZAZHI, Dec 79).....	97
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I. GENERAL INFORMATION

SEVERAL PROPOSALS OFFERED ON 'GREAT GREEN WALL' FOR NORTHERN CHINA

Editor's Note

Beijing GUANGMING RIBAO in Chinese 30 Jan 80 p 1

[Text] In our nation's Qinghai, Gansu, Ningxia, Shaanxi, northern Hebei, Nei Monggol, Liaoning, Jilin and western Heilongjiang provinces, there are 1.9 billion mu of deserts and gobi, forming a 10,000 li windy and sandy line. In this region, there are 213 counties that are being damaged by wind and sand, and of these, 105 counties are being seriously attacked. Damaged farmland and grazing grounds amount to over 100 million mu each. The northwest loess plateau at the middle reaches of the Yellow River suffers seriously from loss of water and soil. It includes the five provinces of Shaanxi, Gansu, Ningxia, Shanxi and Nei Monggol, 115 counties of the region and 8 counties in the eastern part of Qinghai Province. The total area covers 456 million mu. The sand in the Yellow River mostly comes from these regions. The two regions are closely connected geographically, and they form the aeolian arid region encompassing 324 counties of the northwest, the northern part of north China and the western part of the northeast (abbreviated as the "three northern regions"). Vegetation is scarce here, natural disasters are frequent, agricultural and animal husbandry production has been low and unstable for a long time, wood, fuel resources, fertilizer resources and feed are all deficient, and the people's life is hard. Therefore, improving the ecological environment of the "three northern regions" and improving the conditions of agricultural and animal husbandry production have become the urgent wishes of the broad masses of this region.

At the end of 1978, the State Council approved the report on a plan by the State Forestry Bureau to establish shelter forests at key localities in the northwest, the northern part of North China and the western part of the northeast to remedy damage by wind and sand and loss of water and soil. The project of establishing a system of shelter forests in the "three northern regions" was included in the state's key projects of organization and implementation. This decision has encouraged the broad masses, cadres and scientific and technical workers. They believe this is a very important policy decision that will benefit later generations of the Chinese

and it is a policy that coincides with the wishes and demands of the people of the entire nation.

Establishing the system of shelter forests of the "three northern regions" is a grand project to change nature. To implement such a grand project that will affect the future of later generations, the actual situation must be profoundly delved into, conscientiously explored and repeatedly studied. Efforts must be made to draw on collective wisdom and absorb all useful ideas, and reasonable opinions from all sides must be heard so that the design and planning of the project and its organization and implementation are founded on reliable scientific foundations. Recently, the Chinese Forestry Association held an academic discussion conference on establishing a system of shelter forests in the "three northern regions" in Beijing. Many experts, professors and other scientific and technical workers have presented many worthy opinions and suggestions concerning the problem of how to rapidly build a "green Great Wall" well. We now publish a synopsis of some of the opinions and suggestions as reference for all concerned.

Editor

Shelter Forests

Beijing GUANGMING RIBAO in Chinese 30 Jan 80 p 1

[Article by Zhang Qinwen [1728 3084 2429] of the Forestry Bureau of Youyu County, Shanxi Province: "There Must Be Practical Effects, Mere Formalities Must Not Be Allowed"]

[Text] Our nation's northwest, the northern part of north China and the regions of the western part of the northeast are covered by forests to a lesser degree, natural disasters occur frequently, and these are one of the important reasons that agricultural and animal husbandry production is low and unstable. To rapidly change this situation, the state has decided to build a shelter forest system in the "three northern regions". Preliminary plans call for the forestation of various types of shelter forests of 80 million mu up to 1985 involving a combination of expanses of forests, shelter belts and forest networks. This enormous project has been described by people as the "Green Great Wall."

Because of the reference to the Great Wall and because some comrades lack a necessary understanding of the actual nature of the system of shelter forests, some misunderstandings have occurred. In planning the shelter forest, some comrades unilaterally emphasize the formation of a continuous, lengthy and wide shelterbelt of a large scale. Some also suggest that several large scale horizontally parallel forest belts from east to west be planted spanning from north to south. They believe that only this can be called a "green Great Wall." In fact, this view is unscientific and it does not suit the actual situation of the "three northern regions." The system of shelter forests of the "three northern regions" covers a broad expanse, the topographies are complex, the climatic conditions are

different. Therefore measures must be suited to local circumstances and preventive measures must be taken when the threat of damage is present. Forest expanses, forest belts, networks, thickets and rows of trees must be combined. Several thick bands of forest belts can at most provide shelter for an area 30 times the height of the trees in the rear while farmland and mountains and plains several hundred meters beyond will not be able to enjoy the benefits of such a shelter. Therefore, planting several forest belts extending from east to west in the "three northern regions" is not very meaningful. Shanxi Province had emphasized the project of building a forest belt of 50 to 60 meters wide along the outer Great Wall as a means to change the natural scenery of northern Shanxi. This obviously would not produce any actual results.

Our purpose of building a shelter forest is to preserve water and soil, to stabilize sand and provide a wind break. The major bases of the plans and distribution are natural topography, the condition of loss of water and soil and the condition of damage by wind and sand, not a green great wall. If the only reason is forestation and creation of verdure to increase the magnificence of the Great Wall because it is a proud relic of victory of our great motherland, then this reason is valid. However, this can only be one project, and it cannot be confused with the great project of changing nature by planting a system of shelter forests in the "three northern regions." Like planning the "forest belt of the Great Wall", there are still those who pursue only the formality and disregard practical results. The establishment of county forest belts and commune forest belts do not suit the demands of establishing a system of shelter forests.

I believe that within the boundaries of establishing a system of shelter forests in the "three northern regions", forestation to stabilize sand should be planned for the frontline regions where wind and sand are prevalent to cover the sand dunes. At the frontline positions of advancing deserts, large expanses of forests should be established as wind breakers and sand stabilizers. Farming and animal husbandry regions near the sandy areas should be surrounded by large scale and relatively wide forest belts combining forest belts and forest expanses to prevent the desert sand from shifting, and in the back of these regions, a shelter forest network that consists of relatively less dense and narrower forest belts distributed densely should be established. In regions outside the frontline windy and sandy regions, forests should be rationally distributed according to topography, measures should be suited to local circumstances and preventive measures must be established where the threat of damage is present. On uncultivated mountains and in unused valleys, large expanses of forests can be established. On the upper part of mountain slopes of terrace fields and in the mountain valleys of the upper reaches of valley embankments, forests that retain water and soil can be established in combination with engineering projects of water and soil retention. On flat lands and meadows, a network of shelter forests to shelter farmland or meadows can be established. Along river banks, a forest belt can be established to prevent alluviation and protect the banks. In villages, projects to green the four surrounding sides can be implemented. In this way, expanses, belts and

networks of forests in the entire "three northern regions" can be formed and combined with rows and thickets of trees to form a shelter forest system. The percentage of forested regions can reach 40 to 50 percent, and water and soil can be retained, wind can be broken, sand can be stabilized, climate can be regulated, and water sources can be nurtured.

In addition, some comrades believe that the wind and sand in the "three northern regions" come mainly from the great northwest, and solving the problems of wind and sand should mainly depend upon the "green Great Wall." This view is not an overall view. We should appropriately estimate the ability of the forests to change nature. It should of course be recognized that we are still unable to do anything about atmospheric circulation and the great desert. The effect and the influence of forests and trees upon their environs are limited. Although the shelter forest system of the "three northern regions" can reduce sandstorms to a certain degree, its effectiveness in regulating climate and its function in blocking strong winds and cold fronts are limited. The climate in the north China regions is rather dry and the expanse of sandy soil is rather large. The lack of vegetation of the locality has caused the soil of local regions to become sandy and winds and sand to blow right in the face of the capital. Therefore, breaking the wind and stabilizing the sand, retaining water and soil and regulating climate in the rear of the "three northern regions" should mainly depend upon planting of trees and grasses at the locality in a big way and the realization of greening of large expanses of land.

Control Measures

Beijing GUANGMING RIBAO in Chinese 30 Jan 80 pp 1, 3

[Article by Li Lianjie [2621 6647 2212] of the Beijing Agricultural University: "Establishing Various Shelter Forests Must Be Combined With Comprehensive Control"]

[Text] Our nation is situated at the center of the Asian continent. She faces the broad Pacific Ocean on the east and the southeast. Atmospheric circulation in winter of each year forms a concentrated, strong, dry and cold high pressure air mass above our nation's northern part--the Mongolian high pressure system. The "three northern regions" are the forward regions of our nation under the threat of the Mongolian high pressure system. This is the cause of the climatic characteristics of frequent wind, dryness and drought, low temperatures, less rainfall and an amount of evaporation 3 to over 10 times the amount of rainfall in the "three northern regions." Because vegetation is scarce in the "three northern regions," because of dryness and windiness, and because of the concentration of rainfall in summer, the soil has been seriously eroded by wind and washed away by rain water. I believe that according to the situation of the "three northern regions," the establishment of various shelter forests should be combined with comprehensive control measures so that the shelter forests can fully exercise their sheltering function to protect and to stimulate high and stable yields in agriculture and animal husbandry. In the following,

I will discuss mainly the problem of how to combine control measures with the establishment of various shelter forests in the "three northern regions."

Establishing Shelter Forests to Shelter Farmland Must Be Combined With Zoning of Farmland, Building of Water Conservancy Projects, Fertilizer Banking and Soil Improvement

Shelter forests to shelter farmland are an important constituent of basic construction of farmland. The key points in establishing shelter forests to shelter farmland in the "three northern regions" should first be the basic farmlands distributed in wide terrace lands of relatively good water and heat conditions, beaches of river valleys, plains in front of mountains, soils of fertile texture which have been cultivated for many years and those farmlands which are distributed on the 10,000 li line of windy and sandy regions which are damaged by wind and sand. The specifications of the establishment of shelter forests to shelter farmland should be uniformly planned according to the demands of basic farmland construction. Based on the arrangement of basic farmland construction, consideration should be given to topography and the major wind direction and corresponding forest belts should be planted along the two sides of the major routes and the backbone system of irrigation canals. Then it should be combined with planning of square fields, of field drainage and irrigation systems and of road construction to further establish a forest network to shelter the fields. With a fixed dimension of large and small sized forest networks, better sheltering results can be obtained.

Establishing Forests to Retain Water and Soil Must Be Combined With Comprehensive Control

The loss of water and soil in the "three northern regions" is mainly due to topography, climate (rainfall), nature of the soil, condition of vegetation, planting method and many such factors. Forestation and planting of grass are an important measure to retain water and soil. This cannot be neglected. But to control loss of water and soil on cultivated slope lands, engineering and agricultural measures must be implemented at the same time. In this way, forestation and planting of grass can function more effectively. Especially in agricultural regions and semi-agricultural regions, farmlands on low mountains and gradual slopes should be cultivated well. Besides taking biological measures, building terrace fields, banking for irrigation channels, implementation of strip interplanting should also be done. Water trenches should be dug and their beds leveled before the rainy season. This can reduce the speed of runoff. Implementing rotation cropping of sweet clover and agricultural crops not only can reduce loss of soil but also can fertilize and improve the soil. Leguminous grazing grasses can also be used as feed, fertilizers and fuel. Forestation and planting grasses must also be combined with overall control of river valleys and irrigation canal systems to realize better results.

Establishing Shelter Forests for Basic Grazing Fields Must Be Combined With Modernized Construction of Meadows

Shelter forests of meadows have only a fixed function in regulating meadow climate, wind breaking and sand stabilization. To thoroughly change the degeneration of grazing grounds and raise the productivity of the meadows, establishment of such forests must also be combined with the modernized establishment of meadows. Construction of a high and stable yielding basic grazing ground with the construction of water conservancy projects, establishment of meadows, forestation and mechanization in a four way alliance creates conditions for an animal husbandry industry that is stable, high yielding and of superior quality. At present, establishing shelter forests to shelter meadows, selection of the location of the forest belt and arrangement of a forest network to shelter meadows should emphasize establishment of a forest network zone at the frontlines of grazing grounds that are under the threat of wind and sand, in beaches of river valleys with better water and heat conditions, terrace grazing fields, and regions which are being returned to animal husbandry after being used for farming, regions where the texture of the soil is better, regions slated for expansion into man-made grazing fields or feeding grounds. Shelter forest networks should be rapidly established for winter and spring grazing grounds, "grass warehouses" that have been zoned and other grazing fields that have better quality grass and better conditions. Then work must be done to establish the depth and width of natural grazing grounds.

Establishing Forests To Break the Wind and To Stabilize Sand Must Be Combined With Measures of Comprehensive Control of Planting Grass and Drawing Water

Establishing forests to break the wind and stabilize sand should emphasize establishment of large scale forest belts along the edges of shifting sand and expanses of forests to stabilize sand. But, forestation without planting grass will produce the result of stabilizing the sand in a short period but the forest and the trees will not be protected themselves. Thus, forestation and growing grass must be carried out simultaneously. In desert regions where there are water sources, the method of drawing water : push the sand can also be implemented. In the past, drawing water to push the sand enables rice to be planted. Now, drawing water to push the sand enables trees to be planted. The experience of comprehensive control of wind and sand summarized in Minqin in Gansu and Jinbian in Shaanxi by "building sand barriers for protection, mixed planting of underbrush and tall trees, planting of sand wormwood..." can also serve a lesson.

Plant Ecology

Beijing GUANGMING RIBAO in Chinese 30 Jan 80 p 3

[Article by Hu Shishi [5170 1709 0037] of the Plant Physiology Institute of the Chinese Academy of Sciences: "A Discussion of the Problem Concerning the Planning of a Shelter Forest System of the 'Three Northern Regions' From the Point of View of Plant Ecology"]

[Text] The climate of the "three northern regions" is dry and their water resources are insufficient. This is one of the key problems that affect the success or failure of the establishment of a shelter forest system in this region. In the original illustrative map of the plan, the percentage of the large scale shelter forest belt and the shelter forest network of grazing grounds that require irrigation is large. I believe the requirement for water is too great and the plan cannot be easily realized. Recently, the Forestry Ministry revealed a new plan which showed that the areas of forestation and irrigation have been reduced, and most of the areas will involve forestation without irrigation. I believe the plan and explanation have a very high possibility of being realized. In the following, several opinions are presented from the point of view of plant ecology.

In the past, water and soil conditions of the loess plateaus of the "three northern regions" were not poor. But, because of irrational use over a long period, vegetation was destroyed, water and soil were seriously lost, and the development of agriculture, forestry and animal husbandry was hindered. At present, the percentage of coverage of this region by forests is only about 2 percent. The desert and wastelands and the expansive desert regions of poor ecological conditions seriously lack water, and drought and dryness, wind and sand and dry winds seriously damage and threaten agricultural and animal husbandry production. Therefore, the goal of establishing a system of shelter forests in the "three northern regions" should be based on improving the ecological environment, and further, it should be to retain water and soil, break wind and control the sand, improve conditions for agricultural and animal husbandry production, expand underbrush, thickets and forests, increase wood production, and benefit later generations.

From east to west, the "three northern regions" include forest grasses and thickets, meadows, meadow steppes, steppes, desert meadows and deserts. Each region is a unique ecological system formed by flat lands, mountains, desert regions and river valleys. Within one ecological system, reasonable set up of agriculture, forestry and animal husbandry will lead the ecological system to develop in a good direction. If they are set up irrationally, it will cause a vicious cycle in the ecological system, and it will affect and even destroy agricultural, forestry and animal husbandry production. The shelter forest system in the "three northern regions" must rely on a definite ecological system before it can be successfully established. It

is closely related to agriculture and animal husbandry. After the forests were established, they become a part that compose the ecological system and form a whole with agriculture and animal husbandry. Therefore, in considering an overall plan for the establishment of a shelter forest system for the "three northern regions", planning should be done from the viewpoint of combining the ecological system and agriculture, forestry and animal husbandry.

The loess plateau from the southeast to the northwest includes the regions of forest thickets, meadow steppe regions, steppe regions and desert steppe regions. The possibility of expanding the forest areas of the region of forest thickets in the southeast is greater. In the central meadow steppe regions, emphasis should be placed on developing a horizontal underbrush belt on the slopes. In this way, rainfall can be preserved and the vicious cycle of the ecological system can be turned around, creating beneficial conditions for agricultural and animal husbandry production. In the steppe region and the desert steppe region, grazing grounds on slopes should be improved and these regions should be reasonably utilized to increase covering by vegetation and raise the productive ability.

In the explanation to the plan for establishing the shelter forest system in the "three northern regions," the proportion of forest belts and forest expanses to stabilize sand is relatively large. In desert meadows and deserts, the area planned for this type of forests has exceeded the proportion of the planned area of forestation requiring irrigation, and half of these areas has not been assured of irrigation water. Obviously, establishing forest belts and forest expanses in desert meadows and desert regions to stabilize sand is limited by the pattern of the balance of moisture. All efforts will be wasted when this pattern is violated. Or else, when a forest is formed, it will die out because of a lack of water after several years. To prevent damage by sand in sandy regions, the source of sand must be eliminated. Simply relying on forest belts and forest expanses to stabilize sand will not easily control damage by wind and sand. Therefore, plants must be relied on to stabilize sand. Because, on a sand dune where rainfall is greater than 100 millimeters and after overcoming attacks by shifting sand and wind, the use of xerophilous, strongly xerophilous and super xerophilous shrubs to stabilize sand can be successful without irrigation. Of course, the use of plants to stabilize sand must also be coupled with agriculture and animal husbandry. A system of reasonable grazing and logging must be established to protect the presently existing vegetation on sand dunes. It is suggested that in planning, the area of non-irrigated plants to stabilize sand should be increased. Only in this way can wind breaking and controlling of sand be more effective.

Meadow grazing grounds are limited by water conditions and are not suitable for large area forestation. Low forests to shelter grazing grounds can be established on regional low lands and places where there are underground water sources or sections where irrigation is possible. The chances of success for forestation without irrigation in meadow grazing grounds and

meadow steppe grazing grounds with annual cumulative temperatures of between 2000 and 3000 degrees centigrade and annual rainfall of more than 350 millimeters are very great.

In general, establishing a system of shelter forests in the "three northern regions" is a large scale, regionally broad, difficult project with complicated conditions. From the point of view of plant ecology, and under the guidance of the overall view of a combination of the ecological system and agriculture, forestry and animal husbandry, major emphasis should be on non-irrigated forestation, planting forests to retain water and soil, forests to stabilize sand and plants to stabilize sand. Measures should suit regional circumstances. The varieties of trees must be selected well. The typical experience must be conscientiously summarized. Then, the plan for the first phase of the project to establish a system of shelter forests in the "three northern regions" can be basically realized.

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SOME POLICY QUESTIONS CONCERNING RURAL AFFORESTATION

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 2,
5 Nov 79 p 16

[Column by the Policy Study Office of the Ministry of Forestry: "Questions and Answers"]

[Text] Question: Can the state offer long-term protection for the forest proprietary rights of rural people's communes, production brigades and teams, and individual commune members derived from their afforestation efforts?

Answer: The state's afforestation policy is to award possession to the grower. The state, the communes, and the production brigades each own what they plant. Possession of the trees, bamboo, and fruit trees planted by individual commune members around their houses and at places designated by production teams is vested in those individuals. This kind of proprietary right has to be fixed over a long period of time. Because of the destructive interference of Lin Biao and the "gang of four" in the past, afforestation policy was not carried out to the letter in some places, and proprietary rights were not guaranteed. The Forest Laws now provide that "the forest proprietary rights of the state, collectives, and individuals will be protected from infringement." Any unit or person infringing upon forest proprietary rights will be treated severely, and will be punished according to law for serious offenses.

Question: May communes and brigades that don't have enough wasteland in their areas carry out afforestation in barren areas assigned to neighboring communes and brigades, and thereby acquire forest proprietary rights?

Answer: Barren hills and wasteland are part of the nation's natural resources. Proprietary rights to most of the uncultivated areas were determined during the socialist transformation of the system of ownership in the countryside. In order to accelerate socialist construction, we should suit measures to local conditions and make use of our wasteland resources in a planned way as soon as possible. The Forest Laws say that the People's Government at all levels must make plans to carry out afforestation. When afforestation on collectively owned wasteland deemed suitable for it is not completed by the prescribed deadline, and there is no legitimate reason for such failure,

the national government will plan its afforestation, and income derived from the trees will go to the units that plant them. Therefore, all communes and brigades occupying wasteland suitable for afforestation must complete their afforestation assignments by the deadlines set by local governments. If a unit cannot complete its mission because its assigned area is too large, it may consult the local government, which can look at the specific conditions and arrange for other units to carry out afforestation on part of the land. If both parties agree, the unit in possession of the wasteland may receive some remuneration. Communes and brigades that don't have enough wasteland suitable for afforestation in their areas may apply to their respective local governments for land to work. They may also deal directly with units that have too much land to work, and the parties may determine the amount of remuneration to be paid or the proportions into which income is to be divided when it is earned. Such arrangements must be reported to local governments for the record. The state is responsible for safeguarding the forest proprietary rights of units that carry out afforestation.

Question: Do the communes and brigades that carry out afforestation have the power to dispose of the forest products derived from their work?

Answer: Proprietary rights to forest products accompany forest proprietary rights. Those parties in possession of trees have the right to dispose of the products derived from the trees and to receive the proceeds from their sale. Communes and brigades that carry out afforestation control the products of the trees they have nurtured, and they have the power to dispose of them, including lumber, bamboo, fruit, seeds, firewood, and so on. However, the necessity of preventing destruction of forest resources calls for rational cutting and use of timber forests, with due regard for the growth and maturity of trees (the annual cut should not exceed annual growth). The sale of lumber to the state should be covered by signed contracts with reasonable provisions to which the parties scrupulously adhere. Communes and brigades also can increase their revenues by thinning out woods while tending them, and processing the inferior wood and bamboo into finished and semi-finished products.

Question: May districts that are short of firewood assign small sections of wasteland to commune members for them to grow fuel wood forests?

Answer: At present the people in some communes and brigades are experiencing an acute shortage of firewood in their areas, while failing to carry out afforestation on extensive wilderness areas suitable for such efforts. These communes and brigades should work out afforestation programs and build fuel wood forests in a planned way, to solve the firewood problem. Fuel wood forests will be built, managed, and allotted primarily by collectives, but it is also permissible for collectives to build them and then assign the management and utilization of these forests to households according to a prescribed system. Production brigades and teams with large areas of wilderness suitable for afforestation may assign specified tracts of wilderness near villages to households. The individual households will build and manage fuel forests for their own use. These tracts of land may be used only for afforestation. The collectives will still own the land. The parties doing the afforestation work will have forest proprietary rights.

Question: How is the area around homes of commune members on which they may plant trees determined?

Answer: If the area around homes of commune members on which they may plant trees is not definite, the local people's governments will make such determinations on the basis of actual situations. Ordinarily, people's communes make suggestions in principle, and production brigades and teams make determinations, on the basis of historical practice, and by agreement at mass discussions.

Forest trees, bamboo, fruit trees, and other plants already grown by commune members within limits around their houses set in the past by production brigades and teams belong to the commune members who have raised them. If a commune member uses a private plot allocated to him by a collective to grow seedlings and plant trees, the trees and nursery stock belong to the commune member, who may put them to personal use or offer them for sale.

Question: What are the provisions governing tree planting on the sides of roads and waterways?

Answer: The Forest Laws stipulate that all units responsible for the administration of areas along the sides of railways, highways, and waterways will complete their afforestation work along these places within time limits set by local people's governments. The experiences of individual localities with afforestation along the sides of railways, highways, and large waterways indicate there are four principal kinds of circumstances covered by the laws: 1. If a department of the national government is responsible for both planting and management, the department has the forest proprietary rights and interests. 2. If a department of the national government is responsible for afforestation, thus vesting forest proprietary rights in the state, but entrusts management and protection of the trees to communes and brigades, either the income from the sale of forest products is divided proportionately among the parties or the state pays the other parties for their work. 3. If a department of the national government furnishes communes and brigades with seedlings and proper subsidies, and the latter parties raise, manage, and protect the trees, all parties have forest proprietary rights in common, and revenue from the sale of forest products is divided proportionately among them. 4. If a department of the national government sets standards, and a commune or brigade located near or along a railway, highway, or waterway carries out afforestation and manages and protects the trees, forest proprietary rights vest in the commune or brigade, but the latter party must ask the responsible government department for its opinion when tree felling or reafforestation is contemplated. All of the foregoing approaches are feasible. These ways in which the state and communes cooperate in afforestation call for consultations between the parties and a signed contract, which must be reported to the higher levels of government for the record. A contract must be strictly observed. Neither party may rescind it or fell trees as it pleases without the other party's consent. As for ordinary highways, roads, and waterways in counties and communes, the organization in charge of the individual area is responsible for afforestation; the responsibility for planting, management, and protection of trees may also be contracted out to production brigade or team in the same sector, and the party that plants the trees would receive the income derived from the trees.

IMPORTANCE OF AFFORESTATION WORK REPORTED

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 2,
5 Nov 79 p 2

[Talk by Zhang Pinghua [1728 1627 0553]]

[Excerpt] Forestry is an important component of our national economy. During the reactionary rule of past dynasties, our nation's forest resources were greatly depleted through warfare, plundering, forest fires, excessive reclamation, and indiscriminate felling of trees. During the 30 years since liberation, our nation's forestry industry has achieved great successes under the inspiration of Chairman Mao's mighty appeal to "make the country green" and "turn the earth into a garden." Over the years 420 million mu of land has been afforested and maintained in that condition, 12 billion trees have been planted on the "four sides," [around buildings and other places] the total forest area has increased to more than 1.8 billion mu, 9.5 billion cubic meters of wood has been saved up, and the percentage of forest cover has reached 12.7 percent. The rather impressive development of the forestry industry has provided the nation with more than 850 million cubic meters of lumber and a great quantity of other forest products.

Nevertheless, the speed at which we are building our forestry industry is much slower than the growth of the demands of the national economy and the people's livelihood. At present our country is still sparsely forested. The value of the forestry industry's output is only 3 percent of the total output value for farming, forestry, animal husbandry, side-line production, and fishing. Our country ranks number 120 among the world's 160 nations and regions in percentage of forest cover and per capita forest area. Over 1.2 billion mu of barren hills suitable for afforestation and a great number of places around buildings still have no trees nationwide. There is more than 600 million mu of untransformed land covered with bushes and sparse woods. Much cutover in hilly and mountainous areas has not been followed by reforestation efforts, and many such areas are still bare places where the ecological balance has been destroyed. Sand blown by wind has made inroads on 100 million mu of farmland and pasture along the 10,000-li-long sandstorm line stretching from Xinjiang to Heilongjiang. On the loess plateau in the northwest, soil erosion has spread over an area greater than 500 million mu. It has affected 256 counties. The water in the Yellow River

contains more sand than that of any other river in the world, with a minimum of 30 kg per cubic meter at any time and more than 70 kg during flood season. According to the records of Shan County and the Tongguan Hydrologic Station, the Yellow River annually discharges 6 billion tons of silt on the average and washes away large quantities of nitrogen, phosphate, and potash, enough to make approximately 30 million tons of chemical fertilizers. In 1977, heavy rains on the loess plateau caused disastrous floods which discharged 2.16 billion tons of silt. Soil erosion raised riverbeds and silted up reservoirs. The riverbed in the lower reaches of the Yellow River rises about 10 cm every year. In Henan the river bed there is 8 to 10 meters above ground level. "The waters of the Yellow River coming down from above" have become a serious peril for the people living along both banks of the river. Every year tremendous amounts of manpower and financial resources are expended on maintaining the Yellow River dykes. The slightest negligence can cause "the turbulent waters to overflow their banks" and "turn people into fish and turtles." According to a water conservancy department report, destruction of forests, excessive reclamation, and increasingly serious soil erosion along the upper reaches of the Changjiang and the Songhua River are making the water in these rivers increasingly turbid. After forests over a large area in the southern part of the Greater Xing'an Mountains in Heilongjiang were cut down, destructive sandstorms became frequent. Before 1970, grade 6 and 7 winds did not produce dust storms or raise clouds of sand. Now, grade 3 and 4 winds produce clouds of flying dust and sand. Two places known as natural zoological gardens, the primeval tropical forests in Xi-Shuang-Ban-Na of Yunnan and on Hainan Island of Guangdong, have also suffered fairly serious damage.

Since the "gang of four" was smashed, the party and the national government have taken forestry very seriously. A series of policies and decrees has been formulated, and a series of measures adopted, to strengthen forestry work. The Forest Laws were promulgated this year. Nevertheless, the time elapsed is too short and bad old practices die hard. Up to now, the passive state of affairs associated with long-term destruction of forests has not yet been ended once and for all. Indiscriminate and excessive felling of trees, destruction of forests in land reclamation, and forest fires are still serious problems.

9292

CSO: 4007

'JINGJI YANJIU' URGES INCREASE OF UNIT YIELD

HK231215 Beijing JINGJI YANJIU in Chinese No 3, 20 Mar 80 pp 3-9

[Article by Fang Yuan [2455 0626]: "Increase of Unit Yield Should Be the Basic Task of China's Agricultural Modernization"]

[Text] What is the basic task of China's agricultural modernization? This is a very important question over which opinions are divided at the moment. Some think that the basic task of China's agricultural modernization is to increase the labor productivity. Others juxtapose the increase of labor productivity and the increase of unit yield as the basic tasks of agricultural modernization. In my opinion, both of these two presentations are open to discussion. Here I will set forth my views on the question of juxtaposing the two, leaving the question of increasing the labor productivity as the basic task of agricultural modernization to be discussed in the ensuing paragraphs.

I think that in solving the problem confronting China's agricultural modernization we should take materialist dialectics as the guide, follow the basic economic laws of socialism, make a historically and comprehensively concrete analysis of China's agriculture, determine its aim and tasks correctly and find the avenue that is in conformity with the law of development. Dialectical materialism tells us that there are always connections and distinctions between one thing and another, to deny the distinction between the two and juxtapose the two merely from the angle of their superficial connection will not solve the problem. This is the question found in the present discussion of the increase of unit yield and labor productivity. If we proceed from reality instead of an abstract concept, we shall find one characteristic of modern agriculture common to some developed capitalist countries, that is, high labor productivity and low unit yield. This fact is admitted by Americans themselves. They say that the United States raises the labor productivity through farm mechanization but their yield per acre is the lowest in the world. (talk by Edward Shu [transliteration-translabor], deputy undersecretary of the U.S. Department of Agriculture after his visit to China, UP international dispatch from Beijing, 18 May 1978) This fact tells us that labor productivity and unit yield may not be lumped together in an eclectic way. To do so is theoretically to practice eclecticism and, in practice, will guide China in the wrong direction of so-called modernization in which the increase of production cannot be insured.

I. Modernization Must Not Be for Modernization's Sake

What is the aim of China's agricultural modernization? Modernization must not be for modernization's sake. Modernization is not the end but the means. Over this question it is necessary to review the debate between Stalin and Yaloshenko in 1951. Stalin pointed out that to insure maximum satisfaction of the ever-growing material and cultural needs of the whole society is the aim of socialist production and that to keep increasing and perfecting socialist production on a highly technical foundation is the means to the end. Obviously, the aim of socialist agricultural modernization in our country can only be to "insure maximum satisfaction of the ever-growing material and cultural needs of the whole society" and nothing else. (Stalin: "Economic Problems of Socialism in the USSR," People's Publishing House 1961 Edition, p 31) The material foundation for satisfying the needs is the yield, and with cultivated land limited in China, the total yield is determined by unit yield. This being so, the increase of the unit yield must be set as the basic task of our socialist agricultural modernization in order to reflect correctly the aim of socialist production. This is not a matter of expediency but a matter of fundamental importance based on the requirement of the basic economic laws of socialism.

Agricultural modernization is a development process of agricultural economy. That farming, forestry, animal husbandry and fishery products are in short supply is a problem that has long remained unsolved in our national economy. In particular, the ultraleft line pushed by Lin Biao and the "gang of four" did great damage to our agriculture, making it necessary to import grain, cotton, jute, oil-bearing materials, sugar, timber and so forth, causing a considerable number of rural commune members to experience a shortage of grain rations even to this day. In the light of this reality it would be inappropriate to overlook the aim of production as determined by the economic laws of socialism and to set a task that is not based on the increase of the unit yield.

Comrade Mao Zedong said: "If numerous contradictions are found in any process, one of them must be the principal one playing the leading, decisive role while the others are in a secondary and subordinate position. Therefore, in studying any complicated process in which more than two contradictions exist, we should make every effort to find the principal contradiction. By grasping this principal contradiction all problems can readily be solved." (Mao Zedong: "On Contradiction," Selected Works of Mao Zedong Vol 1, People's Publishing House 1966 Edition, p 296) The principal contradiction confronting China's agricultural modernization is a shortage of farm produce. Owing to a shortage of farm produce China's agricultural economy is from far being able to discard the lack of self-sufficiency and low commodity rate of only about 20 percent and, consequently, the level of accumulation is very low. Agricultural modernization is a process of ceaselessly increasing the fixed assets in the agricultural economy. Only by grasping the increase of the unit yield (embracing farming, forestry, animal husbandry and fishery), which is the

principal contradiction, can we raise the commodity rate of farm produce, and increase our ability to accumulate and provide funds for mechanization purposes. With the degree of mechanization gradually raised and the labor productivity increased, it will be possible to free rural labor power from the land and divert it to industry and service undertakings. Development of industry and service undertakings in turn will provide agriculture with more funds for development. In this way the rural economy can be enlivened.

Marx said in his "Das Kapital": "Agricultural labor productivity exceeding the personal needs of the laborers is the foundation of all societies." (Marx: "Das Kapital" Vol 3, People's Publishing House 1975 Edition, p 885) These words are often quoted by people. But people often overlook the sentence preceding these words: "If a man in a workday cannot produce more means of subsistence than those necessary for reproduction by each laborer himself in the narrowest sense that he cannot produce more farm produce, and the daily expenditure of his total labor power is only enough to produce the means of subsistence indispensable to his personal needs, then it is out of the question to speak of surplus products and out of the question to speak of surplus value." (Ibid.) If we analyze all of Marx' words we shall clearly see that he takes "production of more farm produce" as the prerequisite for "agricultural labor productivity exceeding the personal needs of laborers." It is the former that determines the latter, not the other way around. Only by increasing the unit yield in the process of China's agricultural modernization is it possible to increase the labor productivity and ultimately to shake off the backward state in which 800 million people work to produce food.

Agricultural labor productivity is the ratio of yield to the amount of labor put in. It may be divided generally into three categories: the first category lays emphasis on the increase of production. The second category is the synchronized development of the increase in yield and decrease of the amount of labor. The third category lays emphasis on the decrease of the amount of labor. The United States and the majority of developed capitalist countries fall into the third category. In 1977 each farm worker in the United States produced more than 140,000 jin of grain, 70 times higher than our yield whereas the yield per mu was only 488 jin, which was even lower than our 1976 figure of 491 jin. Some people say that grain yield is not the only consideration and that products of animal husbandry should be taken into account. According to the data provided by American writer (Lai-peí) each jin of beef is produced at the cost of 7-20 jin of grain in the United States. In 1976, 250 million tons of grain were produced, 167 million tons of which were used as feed, accounting for 65 percent of the total grain yield. Thus, livestock products were basically derived from grain. If this is taken into account, the preponderant ratio of labor productivity to unit yield would be 140,000,488 jin. Thus, it can be seen that the third category of agricultural labor productivity represented by the United States is obviously not suited to the conditions of our country where the amount of land is small in relation to the population and farm produce is in short supply.

This being so, it shows that anyone who takes the increase of general agricultural labor productivity including this labor productivity not suited to the needs of our country as the basic task of our agricultural modernization lacks a logical assessment of the situation. It is inconceivable to take it as a scientific thesis.

Some comrades take the view that the increase of labor productivity is a characteristic of modern agriculture common to developed capitalist countries and is a generally recognized world concept. This understanding needs to be studied. As Marx said, "The rule common to all production phases and determined by thinking as the general rule exists, but the so-called general conditions for production are nothing but abstract essential factors, the use of which cannot gain an understanding of any realistic historical phase of production." (Marx: "Introduction to 'Critique of Political Economy'" Selected Works of Marx and Engels Vol 2, p 91) Given that agricultural production is governed by the basic economic laws of a given society. In all capitalist countries like the United States, European countries and Japan, modern agriculture cannot break away from the law of surplus value. Marx said: "The aim of capitalist production is surplus value, not the product." (Marx: "The Theory of Surplus Value," Collected Works of Marx and Engels Vol 26, p 213) In capitalist society, profit is a god, and the development of agricultural labor productivity is not synchronized with that of yield but with the development of surplus value. It is precisely because of this that the increase of labor productivity is the aim of production universally sought in capitalist countries. The American President has a special committee to study the question of labor productivity. The congress holds relevant sessions to hear reports. The managers of companies spend a considerable time considering the increase of their labor productivity. Their point of departure is the identity of labor productivity and surplus value. Here is the reason why the bourgeois economists indulge in their talks about labor productivity. The United States is a country in which labor power is short and dear. Oil is extensively used for agricultural purposes, thereby providing conditions for a great reduction of labor power. The United Nations Grain and Agriculture Organization pointed out in its 1977 annual report "Grain and the State of Agriculture in 1976": "Calculated at the price prevailing at the end of the 1960's, one dollar's worth of oil is equivalent to 4×10^9 joules of energy while the food energy necessary for maintaining the medium activity of a man is 105×10^6 joules (250 kilocalories). Thus, one dollar's worth of oil is equivalent to the energy of one man laboring for 3,800 hours. This being the case, it is not surprising that the mode of production marked by intensive use of energy is rapidly developed in industry and agriculture. Accordingly, in the United States and many capitalist countries agriculture follows the economic law pointed out by Marx, "Machinery is the means to produce surplus value," (Marx: "Das Kapital," Vol 1, p 408) and embark upon the road of increasing agricultural labor productivity by saving labor power through farm mechanization.

II. China's Agricultural Modernization Should Take Its Own Road

Modern agriculture marked by intensive use of energy in developed capitalist countries has three characteristics: 1) "Over-production" keeps occurring grain price is low and not steady with the result that the increase of the unit yield is slow while the labor productivity reflected by the decrease of labor power develops at a great rate. The result is that the increase of unit yield and the development of labor productivity are extremely uneven. What happens in the United States has been illustrated in the preceding paragraph. In Canada, 303 jin of grain was produced per mu during 1976, which was 188 jin lower than our figure of 291 jin for the same year while the quantity of grain produced by each farm workers was 188,000 jin. In West Germany, 494 jin was produced per mu in 1977, which was equivalent to our yield, and each farm labor produced 25,600 jin of cereals. In the same year France produced 452 jin per mu, which was lower than our yield, and each farm workers produced 32,000 jin of cereals. The second characteristic is careful calculation and strict budgeting within the enterprises and startling waste outside the enterprises. According to the American writer (Dai-wei-zhi), American agriculture consumes more than 20 billion gallons of oil. That is, approximately 60 million tons a year. Our country produced 100 million tons of crude oil in 1978, from which 21 million tons of diesel oil can be extracted. The quantity consumed in the United States for agricultural purposes is three times the quantity that can be produced by our country in the whole year. With oil prices soaring, American agriculture is troubled with an oil crisis, and the cry for organic agriculture is becoming louder and louder. The American writer (Pu-rui-man) in his article entitled "Petroleum Agriculture" is profuse in his praise of China's organic agriculture. Quoting the textual research made by another American scholar Herris, he says that if the labor thrown into paddy production in China's agriculture is converted into energy units, each unit is capable of gains of as much as 50 times in terms of yield whereas the petrochemical fuels consumed in American agriculture can only get one-fifth returns. The writer is of the opinion that the efficiency of China's agriculture is much higher than that of the United States. The third characteristic is the increasing growth of investments. Production investments made by each farm in the United States averaged \$6,200 in 1940 and increased to \$189,000 in 1978 when the total value of fixed assets including farm machinery, rural means of transportation and other equipment in American agriculture reached \$89.7 billion averaging \$112,000 per farm worker, which was twice as much as the amount owned by each laborer in the manufacturing industry, that is \$55,000. To produce \$1 worth of farm produce in the United States, the amount of investments required averages \$8 whereas in the steel industry \$1 worth of sales averages an investment of \$0.5 only, the difference between the two being 16 times. In West Germany, the fixed assets in agriculture excluding land and buildings, reach 108.2 billion marks which is equivalent to 79 billion renminbi. To produce one mark's worth of farm produce, an average of fixed assets amounting to 3.55 marks has to be invested. Each farm worker owns \$46,000 worth of fixed assets. High investments involve heavy debt and heavy burden for the government. In 1978 American farm owners incurred

debts totaling \$119 billion, a ninefold increase over 1950. In their 1979 financial budgets, financial supports reached \$6.4 billion. The economy of developed countries has a history of 200-300 years. The process in which agriculture with primitive accumulation provides industry with capital has been transformed into a process in which advanced modern industry provides financial support for agricultural modernization. In our case things are different. Both our industry and our agriculture are backward, the ability of the national economy to accumulate capital is very weak and is unable to provide agriculture with huge support in the same way as the developed capitalist countries do. Judging from the above three characteristics, none is suited to the conditions of our country. It is not possible for our country to take the road of these developed capitalist countries to modernize agriculture because it involves enormous consumption of energy and a huge amount of investment and, while insuring a very high labor productivity, it leads to a unit yield that is even below our existing level. Even if we have a huge amount of money for investment in agriculture and even if we increase our labor productivity to the level of Canada--188,000 jin of grain per farm worker (yet the unit yield is lower than ours), the total output will decrease. Such a way of agricultural modernization cannot solve our problem of a shortage of farming produce.

The main body of agriculture consists of crops, forest trees, livestock and fish, all of which are living things. Biological techniques centered on breeding should be the basic means to promote multiplication of these living things so as to achieve a high yield. Farm machinery is the instrument with which people perform labor and carry on biological technical operation. So far as promotion of the development of the body-main of agriculture is concerned, biological technique is the basic means and machinery can only occupy the secondary position. In modernizing our agriculture our country should set right the position which has been turned upside down by the modern agriculture of capitalist countries and take a road with emphasis on biological techniques supplemented with mechanical techniques. It is a road of insuring production increase and saving investments. The basic feature of agricultural production is the conversion of solar energy. In the last two decades, the maximum ratio of utilization of solar energy for the crop cololy in unit-per area was calculated theoretically. Even if it is utilized at the minimum ration, 12 percent can be utilized. Yet, in our country the average value of ratio of annual utilization for our farmland is only 0.4 percent. Theoretically, with solar energy utilized to the maximum the yield of our farm produce can be increased 30 times. Such a high yield is, of course, still beyond our reach but this opens up the prospect of an enormous increase in production by applying biological techniques centered on breeding.

One who regards our agriculture as backward in very general terms fails to make a concrete analysis of things. Take the grain yield for example, in 1976, 197 countries exceeded 1,000 jin per mu in 68,584,000 mu of land. This was higher than the 788.6 jin per mu achieved by Japan from 44 million mu during the same year. Normal Borlaug, American agricultural scientist

and Nobel Prize winner said after seeing China's agriculture: "The Chinese people have made one of the most amazing changes known in the world." Our average yield of grain per mu was 491 jin, 74 jin higher than the 417 jin achieved by the United States in the same year, 188 jin higher than the 303 jin achieved in Canada, 39 jin higher than the 452 jin achieved in France, and 57 jin higher than the 434 jin achieved in Italy. This comparison does not include an incomparable factor, that is, our country has nearly 500 million mu of low-yield land including 50 million mu of saline-alkali land, 80 million mu of waterlogged lowland and 300 million mu of infertile hillslope land. This type of land is called marginal land in capitalist countries and, generally speaking, is not cultivated. But it is all cultivated by us. If we exclude this part of marginal land, we shall find that our mu-per yield of grain would be much higher compared with capitalist countries like the United States and Canada. Some will ask: Since our unit yield is higher than the yield in the United States and Canada, why is our farm produce still so scarce? The reason is that the increase of our population has run out of control. It is about to break the 1 billion barrier. The amount of land per capita is less than 2 mu in China whereas it is 52 mu in Australia, 32 mu in Canada, 14 mu in the United States, 14 mu in the Soviet Union, 5.3 mu in France, 6.4 mu in Yugoslavia and 8 mu in Romania. In our country with a large population in relation to the amount of land, people have to till low-yield land. This results in unevenness of unit yield in our country. In high-yield areas like the Pearl River Delta and the Taihu Valley, grain yield is more than 1,000 jin per mu. In low-yield areas with saline-alkali land on the northwest loess plateau and in the Huang-Huai plains and with red soil in south China and with barren land in mountain districts, per mu yield of grain is only a little more than 100 jin. This uneven state is an exact pointer to the key to increasing the yield by big margins in our country, that is, utilization of our rich labor resources, transformation of low-yield land and increase of the yield. Experience tells us that at given scientific and technical levels the returns on inputs of financial, material and manpower resources from land are gradually diminishing. The same financial and material resources and manpower put into low-yield land will get higher returns compared with those put into high-yield land. The yield from low-yield land that produces about 100 jin now will increase several times after land improvement. If we build commodity grain base areas in low-yield areas, we may achieve greater, faster, better and more economical results.

III. In Increasing Unit Yield, Emphasis Should Be Laid on Grain

"Take grain as the key link, insure all-round development, adapt to local conditions and arrange proper concentration"—such is the law governing development of agricultural production in our country as well as the guiding principle our country must follow in modernizing our agriculture. In the process of increasing the unit yield in farming, forestry, animal husbandry and fishery, we should act according to this law and follow this principle. For this reason we must make overall arrangements and proceed with it with consideration given to the principal and the secondary matters. Considering the characteristics of our country, we must grasp grain production in the first place. This is because the average quantity

of grain per capita was only 600 jin according to the 1972 statistic. This quantity is below the world level of 670 jin. The average figure for developed capitalist countries is 1,224 jin, which is twice as much as ours. The average quantity owned per capita in some countries in the Third World is also higher than ours. The fundamental figure in contemporary developed countries with modern industry is around 1,500 jin of grain per capita. This figure is 2.5 times that of our country. If the problem of grain production is not solved, inevitably it will limit the development of farming, forestry, sideline production and fishery. Therefore, it is imperative in the circumstances to place grain production in the leading position. An argument prevalent at the moment is that the reason why the problem of agriculture has not been solved is because the policy "take grain as the key link, insure all-around development" is wrong, hence the situation in which "the grain taken as the key link, a clean sweep is made of everything." This argument is characterized by a lack of analysis. The tense situation in agriculture was caused by the ultraleft line of Lin Biao and the "gang of four" and has nothing to do with this policy. At the time they were running wild, agriculture suffered a calamity, proper diversified undertakings were condemned as "capitalism" and small free undertakings were cut off as "capitalist tails." The production enthusiasm of cadres and people was dampened and agricultural production was undermined. Since the problem of grain production was not solved, it was imperative to insure grain production and, consequently, all-round development was hindered. Now that the party's policy concerning agriculture is beginning to be implemented, agriculture has taken a turn for the better. Thanks to this and some imports of grain, the shortage of grain has been mitigated. Under such circumstances, it is possible to stress protection of forest vegetation, prevent soil erosion and maintain and improve the ecological environment and it is also possible to stress rational distribution of farming, forestry, animal husbandry, sideline production and fishery and insure all-round development.

Our experiences accumulated over the past three decades fully prove that the way in which grain production was developed had a deep impact on the growth of the national economy as a whole. The number of pigs increased following a year of rich harvest and decreased following a year of crop failure. In cotton-growing areas, infertile land was used to grow cotton and grain was interplanted with cotton. Commune members planted grain in their private plots. All instances reflect grain as occupying the position of the principal contradiction in agriculture. We "must not view all contradictions in the process in the same light and we must divide them into two categories, the principal and the secondary, and lay a firm hold on the principal contradiction." (Mao Zedong: "On Contradiction," Selected Works of Mao Zedong Vol 1, p 297) At a time when the average quantity of grain per capita is as low as 600 jin, it is dangerous to set aside the policy of "taking grain as the key link, insuring all-round development, adapting to local conditions and arranging proper concentration." On the contrary, only by increasing the yield of grain can we divert land, labor power and funds to diversified undertakings. With the increased income from the diversified undertakings, production of

grain can be promoted. Only thus can we gradually turn the tide. It will not do to disregard the state of grain shortage, put the blame on the stress of grain production, talk about changing the agricultural structure and advocate giving up farming in favor of plant-growing. If production of grain is not stepped up, none of these propositions will work. If the state cannot cut down state purchase quotas and cannot insure grain rations for its members, a production team has no alternative but to arrange grain production. Their minimum requirements are to have enough to eat and fulfill state grain quotas.

Nowadays the outcry for eating meat is very loud. If more meat is eaten, surely grain can be saved. Moreover, nutrition can be improved and the health of the people built up. It may help to raise the intelligence quotient. It will please everybody. However, it is inconceivable to talk about animal husbandry in isolation from the production of grain. With the exception of Australia which owns 7.5 billion mu of grasslands, all developed capitalist countries basically obtain their animal products at the cost of grain. The grain directly consumed per capita in the United States amounts to 2,000 pounds a year but only about 200 pounds are eaten and about 1,800 pounds of grain are used as feeds. The ratio of the one to the other is 1:9. Animal husbandry in developed countries rests on the strong foundation of concentrated feeds. Roughly speaking, 1 jin of beef is obtained at the cost of 7 jin of grain, 1 jin of pork at the cost of 4 jin of grain, and 1 jin of chicken at the cost of 2 jin of grain. The people in Canada eat 192 jin of meat each year. If our country is to reach this level, then 1 billion people will have to eat 192 billion jin of meat, to produce which 768 billion jin of concentrated feeds would be required at the rate of 4 jin of feed for 1 jin of pork. [sentence as printed] At the rate of 7 jin of concentrated feed for 1 jin of beef, 1,344,000,000,000 jin of feed grain would be required. Our present grain yield is only little more than 605 billion jin which is not enough even to produce the feed required. In terms of production value, the proportion of animal husbandry in some developed capitalist countries is in excess of farming and is as high as 70 percent in some cases. In these countries, the average quantity of grain per capita is roughly in excess of 1,000 jin. Having produced plenty of grain, that is, plenty of feeds, they have gradually embarked upon a road emphasizing animal husbandry. Some countries like Japan, Denmark, Holland, Britain and West Germany import animal feeds. All of these countries have modernized industries and a modest population and may use foreign exchange to buy feed. The population of our country is about to reach 1 billion and our foreign exchange is in short supply. In our case, it is inconceivable to depend on the import of feed for developing animal husbandry as the main line and assuming that after a number of years our country becomes one with modernized industry and with the ability to use a huge amount of foreign exchange to buy feed, where could we buy such enormous quantities of feed? The total volume of international grain trade is approximately 260-300 billion jin. If we depend on the import of feed for developing animal husbandry as the main line and reach the advanced food components, the quantity of feeds required would be 768-1,344 billion jin, which is 3-5 times the total volume of the international grain trade. True, our country has 3.5 billion

mu of grasslands that can be improved to increase the production of meat, but we cannot be blindly optimistic about the quantity of meat that can actually be provided. Australia has 7 billion mu of grasslands which is twice as much as ours. After 100 years of construction, the area of artificially-planted forage grass accounts for 10 percent in Australia but annual production of meat is only a little more than 4 billion jin. Even if we reach the level of Australia in building pastoral areas, we can only produce a little more than 2 billion jin of meat and each person can have only 2 jin of meat to eat a year. Such an increase of 2 jin of meat per capita cannot change our country into one with animal husbandry as the main line, nor can it change the food components. We are dialectical materialists, dialectical materialism recognizes only the transformation of material forms. The method of raising pigs without grain, which was publicized in those years, has become a joke. Meats come from grain. Cattle are plant-eating animals but it will not do to feed them with plants alone. It is necessary to supplement plants with concentrated feeds. We have introduced some breeds of meat cattle, all of which are fed on concentrated feeds. In the United States these cattle eat 7 jin of grain to produce 1 jin of beef. Animal husbandry should be developed and people's consumption of meats should be improved. The question is how. If we respect materialism we should recognize that meats are converted from grain and that if we want to develop animal husbandry we must "take grain as the key link." Judging by the conditions of our country, if 300 million mu of wasteland are opened up, if planting of grain increases at the rate of 3.5 percent a year, and if our population increases at the rate of 1 percent a year, then by the end of this century our population will reach 1.2 billion, total output of grain is expected to reach 1.2 billion jin, and the average quantity of grain per capita is expected to reach 1,000 jin. Only thus can we reach the critical standard of animal husbandry abroad and can food for our people be improved. However, if we are to reach the modern food components with meats exceeding starch, the average quantity of grain per capita, judging by the experience of foreign countries, must reach 1,500 jin. If our country is not so sure about reaching such a high level, then it is advisable to consider carefully the plan for changing the food components for our people.

IV. Adopt a Correct Attitude Towards Our Fine Tradition of Intensive Cultivation

Our agricultural production is characterized by a large population, a relatively small amount of land, a weak foundation, and intensive cultivation. How to take a correct attitude toward these characteristics is a question that merits attention in the process of modernizing our agriculture. So far as agricultural technique is concerned, Japan has modernized the planting of rice. They grow seedlings in factories, use rice transplanters to transplant seedlings, and kill weeds with chemicals. But the key point of their technique still lies in transplanting. They still use the traditional technique handed down from their forefathers. They do not use aircraft to do direct sowing as is done in the United States. They do not use this method because they are conservative but because

the period of the growth of rice is short in Japan. In the United States rice is grown in the southern part of the country and the growth period is longer. Japan's experience in rice planting tells us that in modernizing our agriculture we should give importance to their traditional experience. For a time some people took the view that at a time when the United States is doing away with plowing we are still doing intensive cultivation and multiple cropping and that we are too far behind. This question is worth being studied. A given reality is determined by a given objective condition and is by no means an accidental product of imagination. For example, the fact that oranges and tangerines are grown in the southern part of our country and apples in the northern part is determined by objective conditions, namely, the climate. Our intensive cultivation and multiple cropping are determined by such conditions as a large population and relatively small amount of land. In the gradual modernization from now on, cultivation technique and system will obviously undergo tremendous changes. But pending a change of these conditions, namely, a large population and relatively small amount of land, the basic content of intensive cultivation and multiple cropping cannot be changed. Moreover, multiple cropping is anything but backward and should be combined with modern agriculture, because the basic feature of farming is to convert solar energy into farm produce. Multiple cropping is better able to utilize solar energy fully than single cropping. Consequently, it is more effective in increasing yields. The main method of cultivation in the United States is single cropping, but some of their modern farms have adopted multiple cropping. This fact illustrates that there is no unbridgeable gap between multiple cropping and modernization. Our country with a large population and a relatively small amount of land has from time immemorial had the tradition of multiple cropping. Only when we adopt this system to make 1.5 billion mu of cultivated land yield as much as 2.3 billion mu and when we arrange grain, other crops, animal feed crops and green manure crops in the narrow area of 1.5 billion mu can we roughly achieve "taking grain as the key link, insuring all-round development, suiting local conditions and arranging proper concentration." In developing multiple cropping, we shall find a contradiction between the use and the conservation of land as well as other problems in some areas. But these problems are not difficult to solve. It is not feasible to regard modernized agriculture simply as a matter of single cropping and mechanization. In modernizing our agriculture, we should make a concrete and scientific analysis of the fine traditions of intensive cultivation and multiple cropping, carry forward their rational kernel and discard their irrational dregs.

To sum up, our country's socialist agricultural modernization and the agricultural modernization in capitalist conditions are conditioned by two essentially different economic laws which result in two qualitatively different economic processes. Governed by the basic economic law of capitalism, agricultural modernization in developed capitalist countries has headed for a lopsided development: high labor productivity and low unit yield. Socialist agricultural modernization in our country can only

develop according to the basic economic law of "by ceaselessly increasing and perfecting socialist production on a highly technical foundation, insure maximum satisfaction of the ever-growing material and cultural needs of the whole society." This should be the case, particularly when there is a serious shortage of farming, forestry, animal husbandry and fishery products. As the resources of cultivated land are limited in our country, we can only increase the total yield by increasing the unit yield. For this reason, whether we proceed from the aim of socialist agricultural modernization or from the shortage of farm produce, we must set increases of unit yield (embracing farming, forestry, animal husbandry and fishery) as the basic task of China's agricultural modernization. Only by increasing the unit yield by big margins can we increase the commodity quantity of farm produce and increase our ability to accumulate funds can we acquire funds to buy agricultural machinery and increase labor productivity and can we provide funds and raw materials for developing commune- and brigade-run enterprises. Only thus can the rural labor power have full employment and can we change the backward state in which 800 million peasants work to produce food and can we build the countryside into modernized countryside with a highly developed agriculture and industry and with greatly improved living conditions for the people.

CSO: 4007

NEW RICE VIRUS DISCOVERED IN GUANGDONG

Guangzhou NANFANG RIBAO in Chinese 11 Dec 79 p 3

[Letter from Chen Huaiyang [7115 2037 0111], Institute of Plant Protection of Guangdong Provincial Academy of Agricultural Sciences: "A New Paddy-rice Virus--Tooth-leaf Dwarf Virus--Discovered in Guangdong Province"]

[Text] Comrade Editor: At the end of May this year, Comrade Zhou Lianggao [0719 0081 7559], assistant researcher of the Guangdong Provincial Academy of Agricultural Sciences, discovered a new paddy-rice virus, the tooth-leaf dwarf virus [chiye ai suo bing [7876 0673 4253 4799 4016]] at the Lianma brigade in Conghua county. Its main symptoms are dwarfish plants, fairly dark colored leaves, a few leaves with toothed edge and curling up and twisting, growing nodes, top lead shrinking during the earing period, incomplete earing, delayed flowering, and grain not full. A test of virus infection was made by keeping brown rice fleas [he dao shi [5964 4470 5723]] on the diseased plants for 4 days, and then transferring the fleas to healthy plants. As a result, after 1 month the healthy plants became sick, and showed the above-mentioned symptoms.

Rice virus is a plant disease rather difficult to prevent and cure, seriously threatening agricultural production. According to information, at present there are 15 kinds of rice virus already known in all countries of the world. Before the 60s, their occurrence was not very serious in the countries of southeast Asia. Since that time, it has become increasingly more serious. For instance, in the southern paddy areas of our country, the yellow dwarf virus is an important virus. In 1964, this virus occurred in hundreds of thousands of mu of late rice in our province. In 1965, it spread over more than 1.3 million mu of late rice. In general, output was reduced by 10 to 20 percent, by more than 50 percent and even to nought in serious cases. The tooth-leaf dwarf virus was discovered in the Philippines in 1971. In the last 2 or 3 years, it also occurred successively in India, Indonesia, Thailand and other countries, and the incidence of this virus reached 90 percent in seriously infected fields. As the incipient symptoms of this disease are not very conspicuous, and when the symptoms become more conspicuous in the later state, the seedlings have already grown so closely together that no space is left between rows. Besides, its occurrence is sporadic.

Consequently, this virus cannot be discovered easily. According to experiment, the brown rice flea is the vector of this virus. From the flea's characteristic of migration by flying over long distances, it is estimated that possibly this new rice virus has spread widely but undetected in our province. Therefore, to prevent the outbreak and prevalence of this virus in our province, we hope that the departments concerned and the technical personnel will pay serious attention to this matter, intensify their investigation and study, try to find effective measures to prevent and cure the virus, and eliminate it promptly at its incipient stage.

9039

CSO: 4007

DRIP IRRIGATION PROMOTED THROUGHOUT COUNTRY

Beijing GUANGMING RIBAO in Chinese 5 Mar 80 p 2

[Article: "Use of Drip Irrigation Technique Extended to over 100 Counties in China"]

[Text] Ever since drip irrigation technique was introduced into China in 1974, it has been widely adopted on a trial basis by more than 100 counties among 29 provinces, cities and autonomous regions, covering a total area of over 40,000 mu. This technique has brought mountain areas under irrigation.

Drip irrigation is a new kind of irrigation technique which emerged in the late fifties. Drop by drop through a plastic pipe, water together with liquified fertilizer can be evenly and slowly soaked into the soil by the roots of plants. Compared with other irrigation methods, drip irrigation has such special features as saving water, labor, land and fertilizer, requiring little skills, and the advantages of greater irrigation capacity and larger per unit yields, thus constituting a way to bring hilly areas under irrigation. However, the stationary drip irrigation system extensively used abroad can only be confined to fruit trees due to its relatively high cost. To accord with actual local conditions, agricultural science groups and technicians in China have recommended conversion to movable drip irrigation system the cost of which only amounts to about 10 percent that of the stationary type (For instance, the average amount of investment in drip irrigation equipment for fruit trees and farmland per mu amounts to only 70 yuan and 30 yuan respectively) and gradual extended use of drip irrigation for grain, cotton, sesame, peanuts, melons and vegetables all of which have thus been increased in production.

Among all the crops under drip irrigation in China today, grain and fruit trees each occupy about one half of the total irrigated area. The total irrigated area has been expanded from 5,300 mu to 22,000 mu due to last year's relatively rapid extended use of drip irrigation on fruit trees, and over 13,000 mu of irrigated land has been added in Liaoning Province over the past year with its current total irrigated area exceeding 15,000 mu. In the Gai County of Liaoning Province located in hilly areas, most of its 300,000 mu of low-yield fruit trees could not be irrigated in the past. Since drip irrigation was tried out in selected regions for two

consecutive years in 1977 and 1978, it has been proven that the total increased output of the fruit trees using drip irrigation is larger than that of those with the sprinkler system and those without using any irrigation by 16.3 percent and 33.6 percent respectively. This accounts for the very high enthusiasm of the entire county in promoting drip irrigation. The accumulated area occupied by installed drip irrigation equipment in Shandong Province over the past several years has reached a total of 15,300 mu among which over 95 percent has been used for farmland irrigation. Located in mountain areas and lacking water, the Nantian Production Brigade in Liubu Commune of Licheng County in Jinan City of Shandong Province only had about 300 jin of grain per unit yield in the past. In 1978, after using drip irrigation around several mountain springs, Nantian Brigade increased its total grain output to more than 530 jin per mu yield during the year. The rotary drip irrigation system in Shandong Province has the advantages of easy operation and requirements labor; 3 mu of wheat can be drip irrigated in 8 hours by just one female laborer shifting the piping during the day. Drip irrigation has also been used on mandarin oranges in Huangyan County in Zhejiang Province with 40 percent increase in grain output over the past year.

9442

CSO: 4007

'RENMIN RIBAO' COMMENTATOR ON FIGHTING NATURAL CALAMITIES

HK231058 Beijing RENMIN RIBAO in Chinese 12 Apr 80 pp 1, 4

[Commentator's article: "Persistently Combat Natural Calamities All Year Round To Reap Bumper Harvests"]

[Text] Over the past 6 months since last autumn and winter sowing, waterlogging and freeze damage have occurred alternatively, thus causing serious adverse effects on agricultural production. At present, the temperature is lower than normal and the summer crops in general are not growing as well as last year. Droughts are adversely affecting spring sowing in northern China and excessive rains are obstructing the cultivation of healthy seedlings in the southern part of the country. According to weather forecasts, such a bad weather situation will continue for some time, the threat of drought and waterlogging may become greater and greater, and plant diseases and insect pests, particularly wheat scab in southern China, may also occur. To reap a comprehensive bumper agricultural harvest this year in the face of this situation, we must establish the notion of persistently combating natural calamities all year round to reap bumper harvests and try to gain the leadership initiative.

Every bumper agricultural harvest is the result of toil. China's consecutive bumper agricultural harvests reaped over the past 2 years resulted from the party's policies which mobilized the enthusiasm of the masses of cadres and people and from the energetic support given by all trades and professions which persevered in the struggle to combat natural calamities. Some comrades do not fully understand this point, lack a sufficient understanding of this year's unfavorable conditions and are not ideologically and materially well prepared to combat natural calamities. Although Qingming is over, some localities have not yet concentrated their labor force on agricultural production. If they do not improve this situation soon, they will surely miss the opportune time which will adversely affect their production. The bumper agricultural harvests reaped over the past 2 years can only be described as making a new step in the readjustment of the national economy. Some localities have only restored their agricultural output to former levels. Their work still falls far short of current requirements. Agriculture is still like an open-air factory. Judging from our current scientific and technological conditions, we are far from having tamed nature. Heaven still controls most most natural phenomena, and all

types of crops may be threatened by natural calamities at any time. Only by taking the initiative in actively making great efforts at all times can we reduce to a minimum the losses caused by natural calamities.

We must not have the idea of leaving things to chance when we combat natural calamities. China is a vast country in which natural calamities may occur in some localities at any time. We must establish the notion of persistently combating natural calamities all year round to reap bumper harvests. We must combat existing natural calamities. If there are no natural calamities, we must take precautions against them and be well prepared for them, as preparedness averts peril. Areas which have had several light rains after a long drought must not hesitate to combat drought. Having a long drought is also no excuse for making no preparations against waterlogging. We must repair houses before the rains come and do well in preparing against all types of natural calamities and all great natural calamities. We must not dig a well until we are thirsty. Only by doing so can we have the firm initiative in combating natural calamities to reap bumper harvests.

Most of this year's summer crops did not grow well in their earlier stages. However, the growth of some wheat crops is taking a turn for the better. They are those crops growing in fields which have been watered to resist drought, hoed to preserve soil moisture and additionally fertilized to promote growth. At present, wheat in northern China is turning green and is in the jointing stage. Rape in southern China is producing shoots and blooming. We still have 1 or 2 months to improve the growth of summer grain and oil-bearing crops. In particular, now is the crucial time to increase production in the major wheat-producing areas including the Huanghe valley. Field management there is still well worth promoting. At this crucial time, we must conscientiously analyze the situation and adopt effective measures to firmly and successfully promote field management. We must not slacken our efforts in promoting field management before the grain and oil-bearing crops are harvested.

Due to this year's drought and low temperatures in northern China, the green-up stage of wheat has been delayed for some 10 days. We must apply additional fertilizer to the fields, sprinkle them with more water, inter-till and hoe them, increase earth temperature and speed up the growth of wheat seedlings. With regard to high-yield wheat fields which have favorable conditions and relatively great potentials, we must give preferential treatment to them in manpower and material resources so as to raise their scientific management levels, lay emphasis on increasing per unit area yield, strive by every means to achieve high production and stabilize the overall situation of the summer harvest. Since the summer grain and oil-bearing crops in southern China have suffered from wet weather and soaking, people there must do well in making furrows and drainage works, reduce the harmful effects of dampness and inspect, prevent and cure wheat scab in a timely manner. We must also do well in preparing against the harmful effects of the xerothermic wind that may occur prior to the harvest and the mildew and rot caused by wet weather that may occur during the harvest so as to reduce possible losses to a minimum.

To reap a comprehensive bumper harvest this year, we must do a good job in spring sowing in addition to combating natural calamities to protect summer jobs. The autumn grain and oil-bearing crops yield about two-thirds of the year's total production. By and large, all industrial crops are harvested in autumn. Due to the frequent occurrences of natural calamities over the previous years, the yields of the autumn grain and oil-bearing crops have not been high and stable. We must do well in grasping the autumn harvest. Even if we have a poor summer harvest, we can still make up for a summer crop failure with a bumper autumn harvest. A successful spring sowing will lay the foundation for a comprehensive bumper autumn harvest. An important reason for the reduction of grain output in 1972 is that there was a serious spring drought and that we failed to lay solid foundations for the spring sowing. This year, many areas in northern, northeast and northwest China along with Yunnan and Guangxi have encountered spring droughts once again. We must never be off our guard against the spring droughts. In particular, those single cropping areas which have a short frost-free period must go all out and try in every possible way to combat drought to promote spring sowing, areas which have irrigation conditions must make full use of their water conservancy facilities and energetically build up soil moisture for promoting sowing. Areas which are deficient in water sources must adopt various measures such as moistening soil before dibbling and mixing seeds with moistened soil and strive to fulfill their plans for spring sowing. Areas which have rains must make no time in sowing while there is sufficient moisture in the soil and conscientiously do well in preserving the soil moisture.

In a word, all types of areas must mobilize their manpower, machines and animal power to go in for promoting spring sowing.

They must successfully sow as many seeds as planned in good time and achieve a full stand of seedlings without additional sowing. Early rice seedlings in southern China are being cultivated and transplanted. Efforts should be made to promote southern China's rice field management, and the growth of rice seedlings there to enable them to withstand low temperatures in May and high temperatures in July. It is imperative for southern China to strive to make a new breakthrough in this year's rice output.

The struggle to combat drought is a task which must be fulfilled on time. This task also deals with a wide range of matters and is extremely difficult. Party and government departments at all levels must strengthen leadership and adopt proper methods to energetically and effectively carry out the task. Laborers are the main body of production activities and the masses can think out good plans to combat all types of natural calamities. We must further implement the party's policies, perfect and stabilize production responsibility systems, fully mobilize the enthusiasm of the masses. Conscientiously sum up the positive and negative experiences gained over the previous years in combating natural calamities, avoid indulging in idle talk, do more practical work, get all the required funds, goods and materials ready for combating natural calamities, organize all trades and professions to fight in coordination and make joint efforts to successfully wage the struggle to combat natural calamities.

Conquering natural calamities and reaping bumper harvests this year are very arduous tasks. However, we should clearly see that with the implementation of the party's principles and policies, the enthusiasm of the masses of rural cadres and people is continuously running high and the technical competence and the material force for combating natural calamities have also been increased and strengthened. We can surely combat natural calamities victoriously so long as we have firm confidence and promote all types of work in a down-to-earth-manner.

CSO: 4007

BRIEFS

TAX RATES ON SUGAR LOWERED--Recently, the State Council approved a "Report on Reduction of Tax Rates on Sugar After Increase of Price of Sugar-bearing Crops," submitted by the Ministry of Light Industry and the Ministry of Finance, stipulating: The tax rate on machine-made cane-sugar is reduced from 40 percent to 30 percent, that on handmade sugar from 30 percent to 20 percent. These reduced rates are to be enforced for the sugar-making season between 1979 and 1980. The report of the two ministries points out that this year the increase of the selling price of sugar-bearing crops has played a certain positive role in the development of the production of the crops. However, the higher prices paid by sugar refineries for the crops increased the cost of production of these refineries, so that the majority of them did a losing business. This does not help us to develop the sugar industry and arouse the enthusiasm of the broad masses of workers. In order not to increase the burden of consumers, we don't intend to readjust the factory price and retail price of sugar, but will meet the additional cost of the industry by reducing the tax rates on sugar. The State Council concurred with an approved the report, revised the tax rates on sugar, and instructed all departments concerned to act accordingly. [Text]
[Guangzhou NANFANG RIBAO in Chinese 11 Dec 79 p 1] 9039

HEBEI FISH-BREEDING--Hebei Province and Wuhan Municipality in Hubei Province have vigorously developed fish-breeding in suburban areas to meet urban consumer needs. Last year, nine suburban fish-breeding units in Hebei Province produced 452 tons of fish, topping 1978 by 36.5 percent. In 1979 fish output from the outskirts of Wuhan Municipality reached 37.32 million jin, topping the previous year by 3.4 percent. [Beijing Domestic Service in Mandarin 0400 GMT 22 Apr 80 OW]

CSO: 4007

BRIEFS

SUXIAN COUNTY GRAIN SOWING--Suxian County in Anhui Province has planned to rush-plant some 1.1 million mu of spring corn and sorghum and 800,000 mu of cotton during the 1980 spring farming. By 18 April the county had planted 830,000 mu of corn and sorghum and some 14,000 mu of cotton. Suxian County also built the mounds on some 450,000 mu of potatoes field and cultivated 160 million jin of seeds for spring sowing. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 20 Apr 80]

CSO: 4007

FUJIAN

BRIEFS

FUJIAN SUGAR PRODUCTION--Fujian produced more than 360,000 tons of sugar during the 1979-1980 sugarcane pressing season. The figure represents a more than 9-percent increase over the preceding sugarcane pressing season, setting a record output in sugar production in the province. [Beijing XINHUA Domestic Service in Chinese 0118 GMT 19 Apr 80 OW]

CSO: 4007

TIANJIN LEADER COMMENTS ON SPRING FARMING

Tianjin TIANJIN RIBAO in Chinese 31 Mar 80 p 1

[Article: "Responsible Comrade in Municipal Agricultural Committee Replies To Questions From a Newspaper Reporter"]

[Text] Recently a responsible comrade in the municipal agricultural committee replied to several questions from this newspaper's reporter on the issue of striving for a bumper harvest in this summer's grain crop.

Question: Please say a few words about the situation in summer grain production this year.

Answer: Judging from the looks of things at the moment, the production situation for this summer's grain harvest looks favorable. Last year 2.8 million mu were sown in autumn wheat. As compared with previous years, there were more superior varieties, the amount of base fertilizer was greater, the area machine-tilled and machine-planted was greater, and care given during wintering over was also better, with ice being broken, sidedressings of fertilizer being given during the twelfth lunar month, and the area of winter cultivation being greater than in previous years. In particular, the implementation of the spirit of the Fifth Plenary Session of the 11th Party Central Committee and the two documents on agriculture from the Party Central Committee, the stability and unity of our cities and rural villages, the liveliness of the economy, the high level of political enthusiasm among cadres and commune members, the fullness of vigor, and the situation in capital construction in each prefecture and country, all show new improvement over the past. Now, not only are fertilizer accumulations by farm families greater than in previous years, but the chemical fertilizer production picture is also very good. If only leadership is strengthened to make fullest use of these beneficial conditions, and management is done with greatest care, getting a bumper summer grain harvest shows great promise.

Question: What unfavorable conditions exist for summer grain yields this year, and what problems require attention for solution?

Answer: The main problem encountered with this year's wheat yields since planting last year up until the present time has been very unfavorable natural conditions. In addition to the continuous drought of last fall and winter, a period of weather in which there was a great drop in temperatures occurred in November with the result that wheat sprouts stopped growing about a half a month earlier than last year. Then again in early spring of this year, temperatures declined, so the wheat turned green almost 10 days later than last year, making for small wheat colonies, weakness in individual plants, and rather scant tillering and secondary root growth for individual plants.

Because these circumstances occurred in the growth of the wheat, a pessimistic attitude of "reduced yields of summer grain are a foregone conclusion" appeared among some cadres in rural villages with some of them relaxing care of the fields and some of them caring only for good shoots while neglecting the poorer ones. Unless such ideas and ways of doing things are changed and remedied in time, obtaining a bumper summer harvest this year will be badly affected. We believe that the party organization on all levels in rural villages must strengthen leadership, and we believe that only by resolving conceptual problems and real problems as we forge ahead can a bumper summer harvest be assured this year.

Question: How can the problems in this year's summer grain production be solved?

Answer: To obtain a bumper harvest in grain this summer, the key lies in cadres on all levels in our rural villages seeing the situation clearly, strengthening confidence, buttressing leadership, and managing painstakingly. In connection with this problem, a conscientious review of last year's experiences with a bumper summer grain harvest is beneficial. Last year, though the number of wheat stalks were more numerous than the previous year, a spring freeze that threatened greatly delayed the wheat's turning green. At the same time, as a result of the wetness of the ground, the soil hardened, and this also had a bad effect on the wheat's normal growth. Under such unfavorable circumstances, because the broad masses of cadres and commune members reacted to the various conditions prevailing in different places and took care of the shoots according to whatever was necessary, repeatedly hoeing, clearing the raised paths between fields in time, applying side dressings of fertilizer to cause the shoots to green, and watering as necessary, tillering was assured with formation of spikes, laying a favorable foundation for a bumper harvest and making last year's summer grain yields bumper. This shows that whether or not a crop is produced depends on planting, but whether the crop is great or small depends on care. The matter depends on people and their good and meticulous tending of the fields. Even though the present state of the shoots is a little poor, by improving care, a bumper harvest can be obtained. Thus, when the shoots have just turned green, to come to the conclusion that "a reduced yield is a foregone conclusion" lacks foundation and it is detrimental as well to mustering the enthusiasm of the masses.

In order to reap a bumper summer harvest this year, cadres on all levels in rural village must have full confidence and put care of the wheat fields in first place, urgently mobilize, give full care to the wheat now at this critical time, and make arrangements for sufficient manpower to be assigned to tend the wheat fields. The skimpiness of wheat shoots and the weakness of wheat shoots has to be reckoned with and effective measures taken to get a large amount of tillering, a large number of spikes, and large spikes. In view of the growth situation in wheat fields throughout the municipality, the time when the shoots are turning green is the time to add push, to push tillering, to push increase in spiking, and to push upgrading and a transformation as the principal direction of attack in tending the wheat fields, with no missing the right time to do early hoeing, and much hoeing to increase ground temperature, and to create excellent conditions for development of the root systems of the wheat. Quite a lot of the wheat fields in our municipality are saline, so simultaneous with hoeing, there has to be timely clearing and digging of sublateral canals to drain away alkali to prevent accumulation of salt in the surface soil that will kill the shoots, so as to assure normal growth of the shoots. Early applications of fertilizer will upgrade the weak shoots, increase spring tillering, strengthen tillering before winter, and increase the number of spikes per mu. In increasing the quality of fertilizer, attention must be given to the proportion of nitrogenous fertilizer to phosphate fertilizer and to recommending as vigorously as possible experience in deep application of chemical fertilizer. Once the wheat has turned green, proper and timely watering should be done suiting methods to local situations and with no "single solution for all circumstances." Where soil moisture is inadequate, watering should begin early; where the underground water table is high and the degree of soil moisture great, late watering should be done; places subject to waterlogging should dredge ditches in good time to flush and drain away salt.

9432

CSO: 4007

SUGAR EXTRACTION SEASON BEGINS IN GUANGDONG

70 Refineries Start Production

Guangzhou NANFANG RIBAO in Chinese 11 Dec 79 p 1

[Article by Zhang Zhixiong [1728 1807 7160]: "Sugarcane Extraction Season Begins in Our Province"]

[Text] Editor's Note: A new season of sugar extraction has begun. The broad masses of commune members in the countryside and the broad masses of workers in sugar refineries are working in close coordination by throwing themselves into this season's intense work of production. Here, we wish them good success by overcoming all difficulties during the season. To promote the development of the sugar industry, the State Council has stipulated reduced rates on sugar. To make a success of the work at various links of cutting, transportation and extraction, the provincial revolutionary committee has made related rules to weigh sugarcane on delivery at the refineries. Strictly carrying out these two provisions will greatly arouse the enthusiasm of the sugar refineries and the communes and production brigades and teams, and make a success of sugar production. We hope that departments concerned in all places will act accordingly.

The season of sugarcane extraction has begun! Up to the end of the first 10-day period of this month, 70 sugar refineries have started operation, including those of Jieyang, Dongguan, Shunde and Zhongshan counties and the Jiangmen Sugarcane Chemical Plant, exceeding one-half of the total number of refineries in our province.

From the beginning of this year, the coastal areas of our province were attacked repeatedly by strong typhoons, many sugarcane plants were uprooted and broken by wind, causing serious loss and damage. In addition, from the beginning of last fall, rainfall was scarce throughout the province, the dry weather affected seriously the growth of sugarcane. However, under the leadership of party committees of all levels, all rural areas acted in the

spirit of the Third Plenary Session of the 11th CCP Central Committee and the Second Session of the Fifth National People's Congress, implemented the "Resolutions of the CCP Central Committee on Certain Problems Concerning the Acceleration of the Development of Agriculture," respected the decision-making power of production teams, promoted the system of responsibility linked with output, adhered to the principle of "more reward for more work" and, at the same time, raised the price of sugarcane for state procurement, increased the incomes of the collectives and commune members, aroused the enthusiasm of the broad masses of peasants in cultivating and managing sugarcane well, adopted various remedial measures and helped many communes and brigades to raise the per-mu yield of sugarcane as compared with that of last year.

To make a success of the production in the extraction season, all sugar refineries seriously studied the documents of the Party Central Committee on enlarging the power of operation, management and decisionmaking of the enterprises, shifted practically the focus of work to production, further readjusted and strengthened the management of enterprises, strengthened their economic accounting, overcame the tendency of unduly pursuing output value and quantity and paid attention to economic results. Before the work of extraction began, all refineries earnestly made a good job of the work of mechanical repair and technical reform. Some refineries conducted experimental points of enlarging the enterprise's decisionmaking power, aroused the enthusiasm of the broad masses of staffs and workers, and actively launched the movement of increasing production and practicing economy. All refineries also spread the experience of the Zhongshan Sugar Refinery, a national advanced enterprise, in strengthening economic accounting and striving to increase profit for the state, and raised their level of enterprise management and their standard of technology.

To boost sugar output, under this year's condition of sugarcane shortage, all refineries also postponed their schedule of extraction, provided that it would not interfere with the farming schedule. They pressed more sugarcane when its sugar content was high and strove to increase the output of sugar with the same quantity of sugarcane. In prefectures of Hainan, Zhaoqing and Meixian, some refineries stopped operation because of the shortage of sugarcane supply, low rate of sugar extraction and high consumption. Their stock of sugarcane was transferred to nearby refineries of advanced technique and lower consumption.

Sugarcane Delivery Stipulations

Guangzhou NANFANG RIBAO in Chinese 11 Dec 79 p 1

[Article: "Guangdong Provincial Revolutionary Committee Notifies All Places to Weigh Purchased Sugarcane on Delivery at the Refineries"]

[Text] To do well the work of sugar procurement and transportation, the provincial revolutionary committee issued a notification on 28 November, asking all place to enforce the practice of weighing purchased sugarcane

on delivery at the refineries and paying money at the stipulated price, to improve the coordination among the departments of industry, agriculture, communications and transportation, arouse the enthusiasm of all quarters and produce still more sugar.

The notification stipulates first that the purchased sugarcane should be weighed on delivery at the refineries, and paid for according to the fixed price. The three parties of the units of sugarcane delivery, the departments of communications and transportation and the sugar refineries should consult with each other to make plans for the cutting, transportation and extraction of sugarcane, sign contracts, each take its own responsibility and work in close cooperation. If it happens that a car or a boat has no [cargo] or insufficient cargo to carry on its scheduled trip, the responsible party should bear the cost of the loss of freight. Next, it stipulates measures to solve rationally the question of compensation for the loss of weight of sugarcane in transit, at 2 percent on the first day, 3 percent on the second day and 4 percent on the third day. If it happens that the sugarcane loses weight by being kept long in stock, it is also necessary to clarify the responsibility and make those who caused the delay responsible for the loss of weight from drying. The notification also makes detailed provisions for expenses of midway transport and lighterage in places with limited facilities, and for expenses of representatives of communes and brigades in sugarcane-growing areas, who are stationed at the refineries.

9039

CSO: 4007

PANYU COUNTY SETS RECORD RICE YIELD

Guangzhou NANFANG RIBAO in Chinese 23 Jan 80 p 1

[Article by Li Dapei [2621 6671 1014] and Li Jianchao [2621 7003 3390]:
"Panyu County Last Year Broke the Record of Rice Per-Mu Yield"]

[Text] Panyu County won a bumper harvest in agriculture last year. The per mu yield of rice for the whole year on the average reached 1,424 jin, the yield of each mu increased by 136 jin in comparison with the record average of 1978. The output of live pigs, pond fish, peanuts, yellow beans and fruits also increased on a fairly large scale.

Panyu County is one of the chief grain-producing counties of our province. To further accelerate the pace of agricultural development, last year the county party committee seriously acted in the spirit of the 3rd Plenary Session of the party Central Committee, and in particular grasped the implementation of policies in the following two fields: First, they seriously implemented the policy about people. The county basically redressed all frame-ups and false and wrong cases, and essentially resolved problems left behind by all political campaigns in the past. Those comrades who had been wrongly labelled as rightists were also rehabilitated. Furthermore, the label on a number of law-abiding landlord and rich peasant elements was removed according to the examination and judgment of the masses and with the approval of the county people's government. The problem of defining the status of persons from landlord and rich peasant families and the problem concerning the class status of their children were all solved. Second, they vigorously grasped the implementation of various economic policies, stressed the policy of "to each according to his work," reorganized the operation and management of rural communes and earnestly adhered to the system of job responsibility for production. Out of 2,777 production teams of the county, 2,667 have set up responsibility systems of various types. Simultaneously, the whole county, from the top level to the grassroots, made efforts to raise the standard of scientific farming. In the county, over 90 percent of the production brigades have established agricultural scientific research groups. Last year, the county and the communes and brigades separately trained nearly 24,000 agrotechnical key cadres, mass activities of scientific farming flourished. They promoted the implementation of various measures to increase production and helped to push the output of rice up to a still higher level.

QINGZHOU COMMUNE RELATES SUCCESS IN GROWING RICE

Guangzhou NANFANG RIBAO in Chinese 21 Jan 80 p 2

[Article by Zeng Mingou [2582 2494 2962], Li Wenxiang [2621 2429 4382] and Luo Xihu [5012 0208 3275]: "Single Crop of Rice Is Better in Mountainous Areas With Early Cold Winter"]

[Text] Synopsis: In Wingshou Commune, mountains are high and water is cold, mild days come late in spring and cold days early in winter. When Lin Biao and the "gang of four" were in power, they were forced to sow double-crop rice and grain output did not increase. After the 3rd Plenary Session of the party Central Committee, the commune party committee emancipated minds, acted according to objective laws, changed to single-crop rice and won a bumper harvest last year.

The Qingshou Commune in Heping County has a total of more than 6,000 mu of rice fields. In the initial period of the sixties, the acreage of double-crop rice was only one-third of the total. From 1966, it increased year by year. Up til 1976, all the paddyfields of the commune were basically sown with double-crop rice. However, under the restrictions of natural conditions of the climate, geography and environment, the per mu yield always fluctuated at about 600 jin in recent years. In the beginning of 1979, the commune party committee members emancipated their minds, grasped production according to natural laws, changed the old practice of sowing two crops of rice in some paddy fields into sowing yellow beans for the early crop and rice for the late crop and, as a result, won large-scale increases in the output of both beans and rice. According to the statistics of the 41.5 mu of experimental fields of 14 production teams, the average per mu yield of early yellow beans was 120 jin and that of late rice 790 jin. If the entire output was converted into unhulled rice for calculation purposes, the per mu yield for the whole year reached 1,000 jin. In comparison with the per mu yield of 600 jin in past years in the entire commune, there was an increase in output of 400 jin from each mu. At the same time, in comparison with sowing double-crop rice, sowing beans and rice in rotation not only saves labor and manure but also increases income. This change was well received by the cadres and commune members.

Qingshou Commune is situated on the east side of the Jiulianshan mountain range. There, the mountains are high and water is cold, mild days come late in spring and cold days early in winter. Throughout the year, only some 180 days are suitable for the growth of rice; it is not advantageous to grow double-crop rice. To win a high grain yield, the local peasants continuously tried to find their way; and, the majority of them adopted the farming system of sowing rice for the early crop and potatoes for the late crop so that the output became higher. However, when Lin Biao and the "gang of four" were in power, this way of doing things was criticized as the capitalist tendency of "taking care of only oneself but not the state." They were forced to sow double-crop rice. As a result, the output was reduced by natural calamities as the seedlings of early rice were often destroyed by the cold spring and the late rice could not escape from the cold dew wind. According to the statistics of the last 12 years, the average per mu yield of late rice was only 202 jin. The fact proved that the grain output could not be increased by sowing double-crop rice.

After the 3rd Plenary Session of the party Central Committee, the Qingshou Commune Party Committee emancipated their minds, broke with old conventions, seriously summed up their own experience of crop rotation by sowing yellow beans and potatoes, yellow beans and rice, and peanuts and potatoes. Also, according to local climatic features and irrigation facilities, they proposed to sow yellow beans for early crop and such varieties of rice for late crop as the Zayou [7177 0327] and Guichao [2710 2600]. One year's implementation of this proposal proved that the rotation of yellow beans and rice is an important measure to increase both money and grain in this mountainous area at present. Its advantages are mainly as follows:

1. To pursue the advantages and avoid the disadvantages, and to win stable and high yields. By sowing one crop of beans and another crop of rice, it is possible to avoid the cold days of spring and the cold dew wind as well as the spring drought and autumn drought, which are the local climatic disadvantages, and to fully utilize the favorable climatic conditions of mild temperature and sunlight in July, August and September, so that the rice will do well in spike formation and the output will be high.
2. To improve the soil and enhance fertility. The rotation of beans and rice will make the soil mature and raise earth temperature. The roots and foliage of yellow beans will increase the organic matter in soil and improve soil structure; the nodule bacteria help to enhance soil fertility. For the sale of every 100 jin of yellow beans to the state, the seller can get the bonus sale of chemical fertilizer (target) for 40 jin, and increase the amount of fertilizer to be used for rice.
3. To stagger the farming seasons for the deployment of manpower. Qingshou is a tea-producing area. When they sowed double-crop rice, there was contention for manpower between tea harvesting and spring farming. The production teams often had too many things to take care of at the same time. After the rotation of beans and rice, they sowed yellow beans first before

they began to pluck tea. There was no contention for manpower. Meanwhile, by sowing yellow beans they can save at least 20 workdays for each mu as compared with sowing rice, with manpower so spared to unfold multiple undertakings.

4. To increase output and income with good economic effect. The per mu yield of 600 jin of double-crop rice is only 72 yuan when it is converted into cash. After the change of the farming system, the per mu yield of yellow beans is 120 jin and that of unhulled rice 790 jin. From the combination of these two items, the average income per mu, converted into cash, is 124 yuan, 52 yuan more than before the change of the farming system.

Qingshou Commune's change of farming system explains that by following the natural law and arranging cultivation in line with local conditions, it will be possible to push agricultural production up fairly quickly.

9039

CSO: 4007

SHAOGUAN PREFECTURE'S EXPERIENCE WITH HYBRID RICE PROMISING

Guangzhou NANFANG RIBAO in Chinese 22 Jan 80 p 1

[Article by He Yaohang [0149 5069 2490], Pang Daoji [1690 6670 1015] and Xie Yifang [6200 0153 5364]: "Shaoguan Prefecture Popularizes Hybrid Rice Over Large Areas With Conspicuous Results"]

[Text] Last year, Shaoguan Prefecture popularized hybrid rice for the late crop over large areas, and again won a bumper harvest. The entire prefecture sowed a total of 899,800 mu of hybrid rice, constituting 29.4 percent of the total acreage of late rice, with an average per mu yield reaching 569.8 jin, being 297.8 jin more than the average per mu yield of regular rice.

Shaoguan Prefecture is situated in the northern part of our province. There are many hills and mountain areas within its boundaries. Warm days come late in spring, but cold days come early in autumn. Moreover, there is frequent autumn drought as a great menace to the production of rice, especially the late crop. Therefore, the broad cadres and masses always eagerly wished to have a fine strain of paddy rice, early maturing and high yielding, which also could escape from the "cold dewwind (17th solar term)" for the late crop.

Shaoguan Prefecture began to experimentally sow hybrid rice 5 years ago, carried out experiments, demonstrations and popularization continuously for nine successive crops till the end of last year, and proved that the agricultural and economic characteristics of hybrid rice, especially the combination of the "Shanyou" [3073 0327] and "Weiyu" [1218 0327], are superior to the present principal regular varieties of rice. In the last 5 years, all the three crops of early, mid-season and late hybrid rice sown in north Guangdong Province were increased in output on a fairly large scale, provided that their combinations were proper, the purity of seeds was high, and the cultivation measures were effective, whether the acreage was large or small, and either in mountain areas or on the plains. In 1977 and 1978, the average per mu yield of the late crops of hybrid rice sown throughout the prefecture gained more than 100 jin from each mu as compared with the regular varieties. Last year, the average per mu yield

mid-season and late crops of hybrid rice sown in the prefecture again gained 222 jin from each mu as compared with the regular varieties. Just as the masses said: "It is very common for the hybrid rice to exceed the 'target' and see 1,000 jin everywhere."

The economic value of sowing hybrid rice is also higher than that of sowing regular rice. According to investigations of the agricultural departments on 58 production teams of different types, the average per mu net output value of hybrid rice is 48.91 yuan, one and a half times higher than that of the regular rice at 19.44 yuan. Calculated on the total amount of work done on each mu, the workday value of hybrid rice is 2.15 yuan, higher by 52.4 percent than that of regular rice at 1.41 yuan.

To make a success of the work of popularizing hybrid rice over large areas, in the last 3 years the prefecture and all counties and communes set up command offices for the production of hybrid rice. The secretaries of party committees of all levels personally carried out experiments and grasped a number of key points in order to promote work in all areas by drawing upon a number of key points in order to promote work in all areas by drawing upon experience gained at key points, and push the work forward throughout the prefecture. On many occasions, the prefectural party committee held special conferences of advanced units and individuals in the cultivation of hybrid rice, and gave them commendation and awards. The prefectural party committee also organized the responsible persons of all counties to lead specialized teams to breed and hybridize seeds on Hainan Island. At the same time, in the form of counties doing breeding and communes doing hybridization, the hybridization of more than 60,000 mu of the 1978 late crop was done locally to make material preparation for the popularization of hybrid rice over large areas last year. The agricultural departments of all levels in the entire prefecture vigorously acted as advisers to the party committees, promptly summed up and exchanged their experiences, and earnestly carried out the work of experimentation and demonstration. The agrotechnical departments of Shaoguan Prefecture and its counties seriously grasped the work of training technicians, successively trained some 80,000 commune secretaries, leaders of production brigades and production teams and agrotechnicians, and thus insured the implementation of various technical measures.

9039

CSO: 4007

COUNTY DETAILS SUCCESS OF NEWLY RICH BRIGADES

Guangzhou NANFANG RIBAO in Chinese 25 Feb 80 p 1

[Article by Erkuan [1422 1401], Zhaoji [2156 1015] and Houmin [0624 3046]:
"Income for More Than 100 Brigades in Shunde County Exceeds 1 Million Yuan"]

[Text] One hundred-three brigades in Shunde County earned an income totaled at more than 1 million dollars from their agricultural sideline and industrial productions last year which was 47 percent of the total income of the county's brigades. At a recently convened county meeting of the three-level cadres, the Shunde County party committee invited these brigades to tell their experiences and called on the county as a whole to learn from them and to overtake them.

There is a common characteristic among these brigades with a total income of over 1 million dollars: They conscientiously carry through general and specific policies formulated at the Third Plenary Session, firmly adhere to socialist direction, persistently develop the collective economy in order to obtain all-round development of the agricultural sideline industry. The main experiences which made these brigades rich are:

1. Concentrate the main strength for developing agriculture and make every effort to raise the level of principal production. The Suixiang Brigade of the Guizhou Commune is a brigade with economic crops as its principal product. Last year, brigade party branch, starting with the actual conditions in the brigade and taking agriculture as the dominate factor, firmly grasped primary production. Per mu yield of pondfish reached 620 jin, up 8 percent from 1978; per mu yield of sugarcane was 6-1/2 tons, up 4 percent; the total number of live hogs raised reached 2,416 head, an increase of 36 percent; a slight decrease of silkworm mulberry production was caused by serious natural disasters, however, the per mu yield of cocoon still reached a high of 265 jin; the total output of grain increased by more than 8,500 jin. The production of fish, sugarcane, cocoons and hogs all exceeded the assigned level for selling to the state. As a result of the high level agricultural production, the total income of this brigade in 1979 reached more than 1,380,000 yuan, which represented an increase of more than 190,000 yuan as compared with 1978. Distribution to commune members averaged 339 yuan per person.

2. Widely open doors of production by following the way of all-round development of agricultural sideline and industrial production. The Xian-yong Brigade of the Chencun Commune is a brigade with rice as its main product. After the crushing of the "gang of four," the brigade party branch at the time when grain output was good, diversified sideline production to actively expand economic crops, to raise more hogs, to set up such industries and sidelines as brickyards, quarries, and flower nurseries in order to make the collective economy expand rapidly. Last year, the average per mu yield of grain for the whole brigade reached at 1,672 jin, an increase of 7.5 percent over 1978, which was over the state grain purchase quotas; per mu yield of pondfish was 751 jin, per mu yield of sugarcane was more than 5 tons, and hog raising averaged at 1.3 head per person. Incomes from other industrial and sideline enterprises totaled more than 1,300,000 yuan. The total income of this brigade last year reached more than 2,186,000 yuan an increase of 25 percent over 1978. Distribution to the members averaged 310 yuan per person, an increase of 98 yuan over 1978.

3. Popularize scientific farming and spread achievements in advanced agricultural scientific techniques in line with local conditions. The Xiashi Brigade of the Lunjiao Commune is a brigade which achieved high and stable yield of various crops through scientific farming. This brigade has a sound agricultural science network which made more than 40 percent of the labor force in each production team good hands in growing various crops. They promoted high-yield measures in an all-round way enabling both grain and economic crops to achieve high and stable yields. Last year, advanced techniques such as rotation of grain crops and sugarcane, planting of more autumn sugarcane and reasonable mixed breeding of pondfish were introduced by each production team. The application of advanced techniques resulted in an achievement of a per mu yield of grain which averaged 1,403 jin, a per mu yield of sugarcane of 6-1/2 tons and a per mu yield of pondfish of 586 jin. The achievement made this brigade one of the few brigades with high yields throughout the county. The total income from agricultural, sideline and industrial production for this brigade reached at 2,170,000 yuan. Distribution to commune members averaged at 290 yuan per person.

9560

CSO: 4007

GUANGDONG AREAS RELATE EFFORTS TO COMBAT DROUGHT

Zhanjiang Prefecture

Guangzhou NANFANG RIBAO in Chinese 21 Jan 80 p 1

[Article by Shou Shan [1108 1472] and Qi Xuan [0366 2467]]

[Text] Cadres and the masses in Zhanjiang Prefecture are resolutely resisting drought and protecting seedlings and are doing a good job in field management of winter crops. They are using every means to achieve a bumper harvest of winter crops. Now the prefecture has sent out 30 percent of the labor force to block rivers, dig wells, and bring up water to fight the drought. Already one million mu of sweet potatoes have been watered or irrigated, and more than 700,000 mu of wheat, beans, and vegetables have been irrigated. Most of the early planted crops have been fertilized once or twice.

There has not been a soaking rain in Zhanjiang Prefecture since the end of last September. Most of the winter crops in the prefecture have been affected by the drought. There are 1.2 million mu of crops which have been more severely affected. In order to combat the drought the prefecture party committee convened a special meeting at the end of last year to study and arrange for resisting the drought and protecting seedlings as well as spring plowing work. At the same time, all the counties and communes in the prefecture mobilized the masses to set a firm foothold on resisting the drought and achieving a bumper harvest. An enthusiastic tide of resisting the drought quickly ensued. The prefecture finance and trade departments have closely coordinated, and have allocated an amount of diesel to help in resisting the drought. In Haikang County where drought conditions are worse, more than 400 cadres from county and commune agencies have been assigned to go down to resist the drought. At the same time the county has provided 250 tons of diesel for the seriously stricken areas. Now, 140,000 mu of winter potatoes in the county have been irrigated, which represents more than 80 percent of affected acreage.

To do a good job in managing winter crops, all of the counties and communes in the prefecture have conscientiously carried out various systems of management responsibility for winter crops. Thus they have aroused the enthusiasm

of the commune members for better results in the work to resist the drought and protect seedlings. In resisting the drought in the suburbs of Zhanjiang municipality, all types of production responsibility systems have been boldly established. Some of the winter potato crops have been estimated as fixed in production and turned over to individual commune members to manage. This has greatly aroused the enthusiasm of the commune members for better results in the work to resist the drought and protect seedlings. In resisting the drought in the suburbs of Zhanjiang municipality, all types of production responsibility systems have been boldly established. Some of the winter potato crops have been estimated as fixed in production and turned over to individual commune members to manage. This has greatly aroused the enthusiasm of the commune members in resisting the drought and protecting seedlings. Many of the commune members are treating the potato patch as a vegetable patch, carrying water to sprinkle over it, spreading fertilizer, debugging, to make certain the winter potatoes grow as they should.

Jiexi County

Guangzhou NANFANG RIBAO in Chinese 21 Jan 80 p 1

[Article by Zhang Yuying [1728 5148 5391]]

[Text] Last year 140,000 mu of winter wheat was planted in Jiexi County. Most was planted during the 20th and 21st solar terms, which was 6 or 7 days later than in the past. Because of the late planting and lack of rain, much of the wheat did not grow well for a while. To assure a bumper harvest of winter wheat, the county party committee repeatedly emphasized careful management of winter wheat to raise unit yield. Concerned departments in the county allocated nitrogen fertilizer for the communes and production teams to use on the winter wheat. The communes and teams have changed from the single fertilizer method to using a mixture of nitrogen, phosphates, and potassium and they concentrate it in rows to get better results. They also carried out overall irrigation in drought stricken areas.

Editorial Urges Proper Management

Guangzhou NANFANG RIBAO in Chinese 21 Jan 80 p 1

[Editorial]

[Text] Beating the drought and managing the winter crops well are now major problems in agricultural production and must be treated seriously.

We are now in the 21st solar term. Most of the winter wheat in Guangdong is in the boot stage. The broadbeans and peas are flowering, and bearing pods. However, because of the long dry spell, we urgently need to resist drought and protect the seedlings. According to weather agencies, there is

no certainty of rain before spring in Guangdong. Therefore we must get a foothold on resisting drought and achieving a bumper harvest of winter crops. We must not leave things to chance and wait for it to rain. In the construction of water conservancy projects this winter and next spring, first priority must be given to meeting the needs of the winter crops and spring plowing to insure normal growth of the winter crops. In those areas where the drought is especially severe, a quick decision must be made to adopt all sorts of measures to find water sources. The spirit of arduous struggle must be fostered, and irrigation must be as quick as possible. After irrigation has been done, fertilizing must be carried out as the crops require. At the same time, attention must be paid to preventing insect and rodent damage. Get the ditches between the fields cleared early so that when the spring rains come, the crops will not be flooded.

Qujiang County

Guangzhou NANFANG RIBAO in Chinese 21 Jan 80 p 1

[Text] Qujiang County is one of the major rape producing areas in Guangdong. Last winter the county planted 110,000 mu in rape, exceeding the plan by 10,000 mu. It is the most acreage planted in rape in recent years, and the quality of planting was better than in the past. After the rape was planted there was a long period of hot dry weather which is very bad for rape, and some of the plants showed signs of early aging. Faced with this situation, all areas implemented systems of production responsibility to do a good job in the management of the rape crop. Now there are more than 40,000 mu of rape in the county that has been fertilized and irrigated and the rape is growing well.

9359

CSO: 4007

VIGOROUSLY PROMOTE SCIENTIFIC HOG RAISING

Pig Raising Contest

Guangzhou NANFANG RIBAO in Chinese 21 Jan 80 p 2

[Article by Wen Junzhi [3306 0193 2784] and Hong Guang [3163 0342]]

[Text] Last month Zhanjiang Prefecture held a 20-day scientific pig raising contest with 17 pig raising units participating. The Xinhua breeding farm won first prize and other units had good results.

Each of the participating units selected one technician and one pig feeder which comprised a scientific pig raising team. Each team fed ten chester white or yorkshire piglets. The piglets averaged about 40 market jin. The competition was conducted simultaneously at the Xinhua breeding farm, the Gaoshou County Shigu Commune livestock farm, and the Suixi County Chengu Commune Tiantou brigade pig farm. There were three parts to the competition: Speed of weight gain; return for feed (amount of feed needed to add one jin per pig); and cost of feed. Each pig feeding team decided on a feed mixture prior to the competition. After the contest began they used the basic principles and practical experience of scientific pig raising, and carefully watched for any changes in the pigs, altered the feed mixture to get more weight gain from the feed, and strived to speed up the weight gain. The results were very satisfying. The first place Xinhua breeding farm averaged 1.882 jin per head per day, and other teams attained advanced levels. This contest has created experience in scientific pig raising.

Improving Pig Breeds

Guangzhou NANFANG RIBAO in Chinese 21 Jan 80 p 2

[Article by Wu Jiangxiu [0702 3068 4423] and Wang Yuting [3769 5940 1694]]

[Text] For the past several years Changjiang County has been actively improving the breed of pigs continually improving the meat production and marketing rate of the newborn pigs.

In the past, the type of pig native to Changjiang County was small and grew slowly. Some pigs were raised for 1 or 2 years and were no more than 100 jin on the hoof. After the "gang of four" was smashed, county livestock departments went to other counties and bought 40 Panke [4149 0344] boars and set up two breeding stations and breeding points where the largest numbers of pigs were raised and artificially inseminated local sows. The resulting hybrid called Panchang [4149 2490] are a large-boned fast growing type. The hybrid pigs average more than 230 jin after one year, compared to 90 to 140 jin for the original breed. Last year Changjiang County artificially inseminated more than 3,500 sows, producing more than 20,200 single-cross piglets. At present there are more than 50,000 pigs being raised in the county, 10,000 more than the highest year in the past.

Scientific Pig Raising

Guangzhou NANFANG RIBAO in Chinese 21 Jan 80 p 2

[Article by Zhu Weiqiang [2612 0251 1730]

[Text] Collectively raised pigs fatten quickly and have a high slaughter rate.

For the last 3 years the Dongfeng production team of the Lexhu brigade of the Nanfeng Commune in Duikai County has propagated and raised hybrid piglets. By using new feeding methods and strengthening management, they have fattened collectively raised pigs more quickly and shortened fattening time and increased the slaughter rate. In 1979 the brigade collectively raised 289 head. One group was slaughtered in June and July, averaging 134 jin of market meat per head, for a profit of 10,405 yuan. This averaged out to 195.50 yuan per collective member. However the average commune member makes 59.10 on collectively raised pigs.

In the past the Dongfeng production team used old traditional methods in collectively raising pigs. It took a lot of feed, the pigs grew slowly, and slaughter rate was low. Beginning in 1977 they conscientiously combined all of their experiences and lessons. First they took 2 years to select 22 good Nanfeng [0589 6265] brood sows. Using artificial insemination they bred them to imported Panke [4149 0344] and Changbai [7022 4101] boars, and propagated a group of large-boned, quick-growing, disease resistant hybrid piglets. At the same time, in view of the physiological characteristics of the pigs, they changed from a few feedings of thin cooked food to many feedings of coarse raw food. They changed from an averaged single type feed to mixtures of feeds concentrating on different growth periods. The results of this type of feeding were: 1. It shortened the feeding time and raised the slaughter rate. In the past it took 10 months to 1 year for this team to market a collectively raised pig. Now it can be done in 6 or 7 months. 2. It reduced the amount of labor and increased labor effectiveness. In the past, one feeder could only raise about ten pigs. Now two primary laborers and three helpers raise 289 pigs a year,

averaging more than 50 pigs apiece. Using many feedings of a concentrated feed mixture, the pigs fatten quickly, go to market quicker, which lowers the cost and increases profits. The new feeding method reduces necessary feed by 50 to 60 jin. In 1979 this team raised 89 more pigs than in 1978, marketed 19 more than last year using 12,000 jin less feed.

Editorial Comment

Guangzhou NANFANG RIBAO in Chinese 21 Jan 80 p 2

[Editorial]

[Text] At present the market rate for pigs in Guangzhou is only around 50 percent. That means that for every two pigs raised only one goes to market. This affects the supply of pork, and results in longterm losses for many communes and brigades.

How can this situation be improved? These reports published here provide some useful experiences. Of course, situations are different everywhere. We must, according to the specific situations that exist, grasp the weak link and not try to do exactly like everyone else. The Dongfeng production team of Fengkai County has revised all the methods from breeding to feeding and quickly raised the slaughter rate. The average member earned almost 60 yuan from the collective raising of pigs. This proves that there is a great future in the collective raising of pigs.

9559

CSO: 4007

FRESHWATER FISH OUTPUT 200,000 TONS IN 1979

Guangzhou NANFANG RIBAO in Chinese 2 Jan 80 p 1

[Article by Meng Jurui [1322 5112 7608] and Li Konghua [7812 1313 5478]:
"Annual Pond Fish Output From Shunde County Exceeds 100 Million Jin"]

[Text] According to locally available statistics, the freshwater fish output in Guangdong Province last year reached 200,000 tons, an increase of 7 percent over figures for the year before. This allows an increase in a continual supply of freshwater fish available for markets in towns and villages throughout the province.

For the past year, as the result of agricultural production policies being carried out in earnest, a responsible fish culture and production system with accountability has been set up. Moreover, a raise in the state-purchase price for pond fish, and assured purchase of fish produced in excess of the state quota have greatly stimulated the active efforts of communes and brigades to develop freshwater fish breeding. The freshwater fish raising area for the province has been increased by over 20,000 mu. In Foshan, for pond fish products from 430,000 mu designated for culture, the average yield per mu last year exceeded 400 jin. Fish output for Gaozhou County from January to September increased by almost 30 percent over the yield for the same period last year.

At present, freshwater pisciculture in Guangdong Province is not growing fast enough. Great potential still exists, whether it concerns expanding the area under pisciculture or increasing production. Many counties and communes are remodeling, rebuilding or building anew fish hatchery stations to meet the development needs of the freshwater pisciculture industry.

The total fish output last year from Shunde County, the primary base of pond pisciculture in Guangdong Province, exceeded 100 million jin, a 5 percent increase over the production record attained the year before. Each of the 10 communes in the county increased yields. The average per mu yield for more than 240,000 mu of fish pond acreage is 413 jin. Exceeding the quota completed the task of pondfish fulfillment.

GUANGDONG DEMANDS STOP TO EXCESSIVE FISHING, URGES CONSERVATION

Guangzhou NANFANG RIBAO in Chinese 8 Jan 80 p 2

[Article by Zhang Zhonghuang [1728 6988 2515] of the Guangdong Provincial Aquatic Products Bureau: "Stop Excessive Fishing, Protect Resources in the Zhujiang River System"]

[Text] At a recent meeting sponsored by the Guangdong Provincial Aquatic Products Bureau for heads of prefectural and county aquatic products offices, aquatic product workers and scientific and technical workers called for strong measures to stem the gradual decline of aquatic products and fish resources in the Zhu Jiang [Pearl River] basin, and emphasized the need to further develop aquatic production in Guangdong Province.

The Zhu Jiang river system includes the Xi Jiang [West River], Bei Jiang [North River], and the Dong Jiang [East River], in which fish is a valuable resource. Over 250 varieties are found here, including more than 100 varieties with great economic value, such as the mackerel, grass carp, silver carp, variegated carp, golden carp, bream, perch and others. Besides these are varieties indigenous to this river basin, such as a thick-lipped fish found only in the Bei Jiang, and varieties of the perch and the barbel which together with the guiyu [2710 7625] and the bandianhuo [2432 7820 9664] make up the four famous fishes of the Xi Jiang, that are well known in China and abroad. The meaty and tasty herring, the triangular bream, and the Chinese sturgeon which weighs over 100 jin, are all choice products of the Xi Jiang basin.

However, during the last decade, as the result of the destructive influence of the extreme leftist line of Lin Biao and the "gang of four," and the inability to overcome chronically poor work habits such as over-fishing, these fishery resources are being depleted, with some choice varieties on the verge of extinction.

According to aquatic production workers, this destruction of aquatic resources may be summarized as follows:

1. Wanton overfishing. Harmful fishing methods utilizing electrically-charged baiting, dynamite, or poisonous bait have not been forbidden. In some localized areas, this practice is used with increasing frequency. Organo-phosphorus pesticides such as methyl parathion and Toxaphene used to poison fish before the catch are particularly harmful to fish fry. Great numbers of parent fish are caught on their return upstream to spawn, resulting in extinction for some. In other instances, very fine nets are used to catch fish fry. According to surveys made, fishermen in the vicinity of Datang and Lubao located in the lower reaches of the Bei Jiang use nets with mesh as fine as 0.5 cun across. In some places, cloth hoods are used specifically to catch small fry. On the shores of Wanqinsha [5502 7308 3097] located at the mouth of the Zhu Jiang, cloth nets with mesh even smaller than a large grain of rice have been used. According to incomplete statistics, during the spring and the fall when the fish fry are growing and fattening, over 100 dan of fish fry are caught each month.

2. Water pollution by industrial wastes and agricultural chemicals. According to incomplete figures, industrial enterprises in the seven cities of Shaoguan, Guangzhou, Jiangmen, Foshan, Huizhou, and Moming dump over a million tons of waste into the river system each day. The sulfuric acid plant at Gufou [6252 1009] in Gaohe County releases its waste water and gases directly into the Xi Jiang, so that fishes such as the bream, once produced in abundance in Nanhai and Jiujiang, are now extinct.

3. Lack of fishways in water conservancy projects such as dams which affect fish breeding. According to statistics, no allowance for fishways were made in construction of 6 dams, 17 control gates, and 2 slopes in several counties and towns of Gaoyao Yunfou, Yunan and Fengkai in the vicinity of the Xi Jiang, and in construction of a 3-step dam on the Nanding River in Yunan. Because of obstruction by the control gates, parent fish cannot return upstream to spawn, and the fish fry, once grown, cannot travel downstream. Consequently, a great drop was experienced in fish production. Before the dam for the Xijin [6007 3160] Hydroelectric Station on the Yu Jiang was built, the annual output of fish fry for the variegated carp, silver carp, grass carp and dace from Gui County in Guangxi Province exceeded one billion fry. After the dam was built in 1964, this figure dropped to 80 million. By 1973, this figure dropped still further to a little over 10 million, a decline of 90 percent. As the result, Gui County which used to export dace fry in abundance has to import it from other localities now.

To rapidly turn this situation around to conserving fish and protecting fishbreeding resources, aquatic production workers suggest the following measures:

1. Strengthening investigation and research work to ascertain the true status of river fish resources, and to determine causes [of decline] and study new ways to increase these resources.

2. Effecting the State Council's "Law To Protect the Propagation of Aquatic Product Resources" by drawing up rules for such measures covering the Zhujiang river system. Reasonable fishing is to be practiced, eliminating the use of harmful tools and practices by stages. Backed by the law, the catching of parent fish and fry are to be strictly prohibited. Times and places when fishing of economic varieties are forbidden are to be set up.

3. Cleaning up industrial waste water. To prevent the "three wastes" of industry from polluting fishery resources, all waste water from industrial enterprises located along the river must, after processing, meet national environment protection standards before release into the river. This is to meet the national goal of control in 5 years, and basic resolution and control within 10 years.

4. Promulgating the policy of "conserving the trees, the boats, and the fish" during the construction of water conservancy projects. Departments connected with water conservancy projects and those related to aquatic products should coordinate activities and strengthen cooperation, to prevent any undue effect of project construction on certain fish varieties. Before initiating a reclamation project, a careful study must be made of the ecology and natural habitat of the fish fry. Wherever possible, large-scale reclamation in areas where the young fry are spawned and grown are to be avoided.

5. Initiating the artificial release of fish fry to promote breeding of those varieties of fish with great economic value.

6. Strengthening measures to protect river fishbreeding and those to improve fishery administration and management. Patrol boats should be added to help police the three waterways in the Zhujiang network.

5292

CSO: 4007

BRIEFS

EXPERIMENTAL FIELD PRODUCTION—Jiang Bingzhou [5592 3521 3564], the deputy secretary of Shadui Commune Party Committee, who is also a model worker of Xinhui County, achieved an area record with an average per mu yield of 3,119.3 jin of grain from his 1.11 mu experimental field attached to the Zhaimen First Production Team of the Shaxi Brigade last year. The per mu yield of wheat (Jin Mai 2454) was 751.3 jin, per mu yield of early rice (Guba [Cuba] 226) was 1,224 jin and per mu yield of late rice (Ke Guang 10) was 1,144 jin. Jiang Bingzhou was rewarded by both the county party committee and the commune party committee with 100 yuan from each. The experimental field of Jiang Bingzhou was originally a piece of barren land with an annual per mu yield of only 800 to 900 jin. When he made the high-yield experiment, he applied a very slight amount of chemical fertilizer with a top application for triple cropping of only 10 jin each of compound fertilizer and urea. The main reason for his success was due to the fact that he knew how to promote improved varieties of rice, how to do farm work in the right season, how to use a reasonable amount of water, and how to pay attention to cultivating the strength of the land. Last year, commune and brigade cadres of Shadui Commune learned from Jiang Bingzhou his experience in scientific farming and reaped record harvest from their more than 2,000 mu of high-yield experimental fields. An experimental field with an area of 14.8 mu cultivated by the commune party committee reached an annual average per mu yield of 2,144.4 jin, among which, the experimental field cultivated by commune party committee secretary Huang Zian [7806 1311 1344] reached an average per mu yield of 2,937.5 jin. [Text] [Guangzhou NANFANG RIBAO in Chinese 24 Feb 80 p 2] 9560

PONDFISH KILL—During late January and early February this year, many of the dace fry in the pondfish production area died because of overcast, cold weather. The annual output of dace is usually 30-40 percent of the total output of pondfish. Therefore, a successful cultivation of dace is of great importance in achieving a good annual harvest of pondfish. Nanhai County, in order to cope with the shortage of fry in fish ponds resulting from the disastrous cold weather, has immediately adopted the following remedial measures to insure that sufficient fry are put in fishponds.

1. They are checking immediately the amount of dace fry killed due to the cold and timely replenishing the dace fry in accordance with the actual

shortage. 2. They are making an early feeding after the fry were put in the pond and strengthen scientific methods of fish raising in order to achieve a better harvest. 3. They are increasing feed in the dace raising ponds and accelerating breeding. As soon as the small fish become young fry, they are putting them in the ponds for raising. 4. Among the brigades, they are making up one's deficiency from another's surplus. Should there still be shortages, they will buy from outside in a timely manner. 5. More African carp, northeastern carp and other varieties of fish will be put in ponds where there is a shortage of dace fry to make up the required amount. This will insure that there are sufficient young fry in the ponds. We propose that each commune and brigade in the pondfish production area immediately adopt measures to cope with the situation so that preparations for ploughing and seeding can be done well. [Text] [Guangzhou NANFANG RIBAO in Chinese 20 Feb 80 p 2] 9560

DABU COUNTY EXPERIMENTAL FIELDS--To grope for the law of grain high yield, in recent years the principal leading comrades of the CCP Dabu County Committee persisted in cultivating experimental fields at the county demonstration farm, together with the cadres and workers. In 1979, they sowed three crops of wheat-rice-rice on 3.05 mu of experimental fields. The average per mu yield of wheat from spring harvest was 617 jin, the average per mu yield of early rice "Guichao" [2710 2600] was 1,225 jin, and that of late rice "Guichao" 1,081.6 jin. The average per mu yield of grain for all the three crops of the year was 2,956.6 jin. One plot of 1.5 mu of the experimental fields scored an average yearly per mu yield of grain up to 3,000.6 jin, and set a record of per unit area yield of grain in the county. [Xiang Min [0686 3046]] [Text] [Guangzhou NANFANG RIBAO in Chinese 19 Jan 80 p 1] 0939

CSO: 4007

GUANGXI

BRIEFS

GUANGXI SUGAR PRODUCTION--Guangxi Zhuang Autonomous Region produced 395,000 tons of sugar during the 1979-1980 sugarcane pressing season despite a serious drought last year. The figure is 10,000 tons more than the preceding season. The region produced only 210,000 tons of sugar in 1977-1978. [Beijing XINHUA Domestic Service in Chinese 0225 GMT 19 Apr 80 OW]

CS0: 4007

BRIEFS

COUNTY GRAIN OUTPUT--As a result of rationally readjusting acreage of various crops, Hailun County of Heilongjiang Province increased its total grain output in 1979 by some 15 million jin. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 18 Apr 80 OW]

RAOHE COUNTY AGRICULTURAL PRODUCTION--In Raohe County of Heilongjiang Province, sown acreage of wheat has been increased from 763,000 mu last year to 1.2 million mu this year and soybeans from 562,000 mu to 800,000 mu. The county's sown acreage under sugarbeets has been expanded by 160,000 mu, an increase of nearly 100 percent over 1979. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 20 Apr 80]

LINDIAN COUNTY SUGARBEETS--This year Lindian County, Heilongjiang, planted sugarbeets on 153,000 mu which accounts for 15 percent of the county's cultivated land. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 21 Apr 80 OW]

NEHE COUNTY WHEAT ACREAGE--Nehe County, Heilongjiang, has been expanding its wheat and soybean crops acreage in light of its favorable conditions for growing such crops. Last year, 1.4 million mu of the county's fields were planted with wheat and soybean crops. The county plans to further expand the acreage by 7.8 percent this year. [Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 16 Apr 80 OW]

CSO: 4007

LIANYUAN PREFECTURE'S CURRENT FARMING SITUATION DESCRIBED

Beijing RENMIN RIBAO in Chinese 4 Feb 80 p 2

[Text] HUNAN RIBAO reports that on the basis of a good harvest in 1978, a large scale increase in agricultural production was obtained again in Lianyuan Prefecture of Hunan Province last year. The grain yield was more than 1,100 jin per mu in the entire district; a yield increase was obtained in all items of forestry, animal husbandry, subsidiary industries, and fishery as well. The base figure is rather high. Can it be made larger this year? The Lianguan District Committee and the county committees of the various counties gave an affirmative answer to this question, after a serious analysis of the current situation.

In the beginning, some comrades believed that if the level of last year is maintained it would not be so bad. It would not be easy to speak of still higher yields. Others believe that the drought which continued through the autumn and the winter last year brought some damage to the spring harvested crop and the green manure. Besides, basic agricultural construction was relaxed for awhile. Continued yield increase is very difficult.

Aiming at this type of thinking, the prefecture committee tried to get down to reality. Several typical advanced units were first seriously analyzed. In Xinhua County, based upon the special characteristic of being a mountainous area, agricultural production was developed in a manner suitable for the land. The unit yield of grain broke through the 600-700 jin situation to reach more than 920 jin per mu. In Shuangfeng County, the Gantang Commune Party Committee struggled alongside the masses to maintain high and stable yields continuously for more than 10 years. Last year, the unit yield of grain surpassed that of Shuanggang. From the experience of these areas, a favorable condition may be expected for this year. The potential for sustained yield increase was found.

As the emphasis of the work of the entire party is shifting, the leaders of various levels are now more able to concentrate their efforts in production and technology. With all items of economic policies carried out, the masses of commune members will become more positive and the industrial production will be prosperous. This is especially true in the development of chemical fertilizer production, which will provide an even more abundant material

basis for this year's agriculture. Although the job of yield increase for this year is difficult, if the leaders of the various levels continue to keep a clear head in implementing the party's rural economic policy correctly, and to do a good job concretely, it is possible to grow continuously.

In order to struggle for even greater harvests this year, the Lianyuan prefecture Committee now emphasizes pursuing production and taking care of the weak links. They intend to build a firm foundation. As the area of winter crop is small and growth conditions are poor, they are trying very hard to emphasize cultivation and management. Intermediate cultivation and fertilizer application have all been carried out in the 330,000 mu seeded to rape and 500,000 mu of wheat to try to obtain a yield increase. On the other hand, they are urgently preparing for planting 150,000 mu of spring potatoes, 50,000 mu of buckwheat to try to obtain a yield increase of spring grains. In the 1.5 million mu of green manure of the prefecture, 30 percent of the seedlings were dead. Aside from strengthening the cultivation and management of the survived plants, the dry land is being planned for growing spring grass seeds to be used for planting in the future. At the same time, the masses are urged to prepare farm fertilizer. The stubble of the 450,000 mu of early rice in Shaotong County is to be turned into ash for preparing various types of ash fertilizer. More than 20 dan may be obtained from every mu of stubble on the average. Agricultural basic construction is eagerly being carried out. Since the winter of last year, more than 70,000 cold soggy fields of the prefecture have been reconstructed; more than 200,000 ponds repaired; more than 7,000 new ponds were either enlarged or constructed in the mountains. The prefecture committee urged people of all occupations to actively create favorable conditions for the service of agriculture. From the two levels of the prefecture and the county, more than 700 cadres were mobilized to go to the 45 communes and more than 90 brigades for local work. The supply system of the prefecture sent 1,400 persons to help the communes and brigades to develop multiple work enterprises. The agricultural bank system of the prefecture organized 73 million yuan of agricultural production capital which has been gradually distributed to the rural communes and brigades.

6168

CSO: 4007

EXCHANGEABLE BASE OF PADDY SOIL IN SOUTHERN REGIONS STUDIED

Nanjing TURANG [SOIL] in Chinese No 6, Dec 79 pp 215-218

[Article by Chen Jiafang [7115 1367 0972] and Shao Zongchen [0605 1350 5256] of the Nanjing Pedology Institute of the Chinese Academy of Sciences: "Exchangeable Base of Paddy Soil in Suzhou Prefecture"*]

[Text] A fair amount of attention has been given to the exchangeable base of acidic paddy soils of the southern regions in the course of study of our country's paddy soils. A lot of data has also been accumulated and there have been discussions about their significance in the genesis of soils and fertility of soils. The exchangeable base of neutral paddy soil has been studied but little, with only some preliminary work having been done on soil structure questions. Since 1973, while studying the problem of stiffening of paddy soils in Suzhou Prefecture, some research was done on the exchangeable base.

1. Provision of Test Samples and Analytical Methods

Aside from some individual samples, all samples provided for testing were yellow soils from flat lands and high flat lands in Suzhou including blue mud from low-lying paddy fields surrounded by dikes. All mother material composing the soil was lacustrine accumulations. Apart from seven profiles in which perirousness differed, all others were soils from cultivated layers.

Organic content of soils from cultivated layers was between 1.8 and 3.8 percent. On the basis of statistics from 50 samples, soil with a 2.0 to 2.5 organic content amounted to 36 percent of the total number of soil samples; soil with 2.5 to 3 percent amounted to 46 percent; and soil with <2 percent and >3 percent amounted to 4 percent and 14 percent, respectively, of the total number of samples. Clay content of test soil amounted to between 13 and 55 percent. On the basis of statistics for 57 samples

* Comrade Wumeiling [2976 3780 3781] participated in some determinations.

(among which seven were from the plow pan and subsoil layers), the soil samples in which the clay content was ≤ 23.0 percent, 23.1 to 26.0 percent and 26.1 to 29.0 percent and > 29.0 percent were respectively 36.9 percent, 29.8 percent, 21.0 percent, and 12.3 percent of the 57 samples.

The exchangeable base composition method used neutral N ammonium acetate solution to extract, followed by the EDTA volumetric method and the flame photometric method to test for calcium, magnesium and potassium, and sodium, their sum totals being the total amount of exchangeable base. Positively charged ion exchange in the soil (abbreviated below simply to exchange) used standard methods for testing samples. Consequently, it was impossible to avoid some disparity between total amount of exchangeable base and exchange. Statistics on test results for 62 samples show that samples with a relative disparity of ≤ 5 percent amounted to 48.4 percent of the total, and those with a disparity of between 6 and 10 percent amounted to 19.4 percent. Samples in which the total amount of exchangeable base was greater than exchange by 6 to 10 percent amounted to 19.4 percent of the total. It was greater by 12 percent in 17 percent of the samples. These samples may have been affected by soluble salts (including traces of hydrochlorates).

These effects appear to be related to the lay of the land where the soil came from and to soil perirousness. Soluble salts were fairly high in soil from low-lying paddy fields surrounded by dikes. Its total amount exchangeable base was greater than its exchange by between 12 and 52 percent. In layers at a depth of below 85 centimeters in clear water fields with good perirousness in high field areas of Wuxi County, total amount of exchangeable base was as much as 12 percent above the exchange, and at other levels it averaged 5 percent. In fields of poor perirousness, total exchangeable base and exchange in soil layers showed differences in profile of between 11 and 16 percent. This was identical with the soil from poor fields of low perirousness where soluble positively charged ions were about 0.7 to 1.0 milligram equivalent per 100 grams of soil. Therefore, use by this article of the percentage of exchangeable positively charged ions in the total amount of exchangeable base as the saturation point of positively charged ions is within permissible limits for the majority of samples.

2. Exchangeable Base in Paddy Soil

The exchange in paddy soil in the Suzhou area, which is generally between 14 and 28 milligram equivalents per 100 grams of wind-dried soil is directly related to the clay content of the soil (exchange = 0.34 (percent clay) plus 10.6 , $r = 0.705$, $n = 48$, $P < 0.001$), while unrelated to organic content ($r = -0.011$).

The extent of saturation of exchangeable calcium, magnesium, sodium, and potassium as well as the percentage distribution for samples at each degree

1) 表1

不同水稻土的交换性盐基状况

(以各盐基饱和度中样分布百分率表示)

2)	3) 土 壤	4) 饱和度范围	5) 饱和度分 类				
			<65.0	65.1—70.0	70.1—75.0	75.1—80.0	>80.0
10)	6) 中 (97)	84—81	3.1	17.5	54.5	23.7	2.1
	7) 酸 (84)	10—90	80.8	8.0	6.0	3.6	3.6
	8) 中、耕(49)	84—81	3.0	12.2	59.3	24.5	2.0
	9) 酸、耕(20)	16—69	95.0	5.0	0	0	0
10)	11) 土 壤	12) 饱和度范围	13) 饱和度分 类				
			<14.0	14.1—18.0	18.1—22.0	22.1—26.0	>26.0
18)	14) 中 (97)	12.8—31.3	1.0	12.4	32.0	43.3	11.3
	15) 酸 (84)	3.5—31.7	59.5	14.3	13.1	7.1	6.0
	16) 中、耕(49)	12.8—28.4	3.0	10.2	42.9	38.8	6.1
	17) 酸、耕(20)	9.9—23.5	75.0	10.0	5.0	10.0	0
18)	19) 土 壤	20) 饱和度范围	21) 饱和度分 类				
			<3.5	3.6—3.5	3.6—4.3	4.6—5.5	>5.5
26)	22) 中 (97)	1.9—6.5	9.3	37.1	37.1	11.3	5.2
	23) 酸 (84)	0.9—9.1	21.4	33.4	11.9	7.1	26.5
	24) 中、耕(49)	2.1—6.5	10.2	22.5	40.8	16.3	10.2
	25) 酸、耕(11)	—	36.4	27.2	0	0	26.4
26)	27) 土 壤	28) 饱和度范围	29) 饱和度分 类				
			<1.0	1.1—1.5	1.6—2.0	2.1—2.5	>2.5
34)	30) 中 (97)	0.5—2.6	38.1	42.3	15.5	1.0	3.1
	31) 酸 (84)	0.7—4.6	22.6	16.7	9.5	14.3	38.0
	32) 中、耕(49)	0.7—2.6	12.2	59.5	14.3	2.0	2.0
	33) 酸、耕(20)	1.0—4.4	5.0	10.0	15.0	20.0	50.0

34) 注: “中”——中性水稻土; “酸”——酸性水稻土, “耕”——耕作层。()内数字为样本数

Key: 1) Table 1. Exchangeable Base of Different Paddy Soils (expressed as percentage of distribution of samples within each saturation classification)

- | | |
|------------------------------|-------------------------------|
| 2) Exchangeable calcium | 10) Exchangeable magnesium |
| 3) Soil | 11) Soil |
| 4) Extent of saturation | 12) Extent of saturation |
| 5) Saturation classification | 13) Saturation classification |
| 6) Neutral | 14) Neutral |
| 7) Acidic | 15) Acidic |
| 8) Neutral, cultivated | 16) Neutral, cultivated |
| 9) Acidic, cultivated | 17) Acidic, cultivated |

[key continues]

- | | |
|-------------------------------|-------------------------------|
| 18) Exchangeable sodium | 26) Exchangeable potassium |
| 19) Soil | 27) Soil |
| 20) Extent of saturation | 28) Extent of saturation |
| 21) Saturation classification | 29) Saturation classification |
| 22) Neutral | 30) Neutral |
| 23) Acidic | 31) Acidic |
| 24) Neutral, cultivated | 32) Neutral, cultivated |
| 25) Acidic, cultivated | 33) Acidic, cultivated |
- 34) Note: "Neutral means neutral paddy soil; "acidic" means acidic paddy soil; "cultivated" means the cultivated layer of the soil. Numbers within parentheses, (), are sample numbers.

of saturation is shown in Table 1. In order to make comparisons, pertinent data about southern acidic paddy soil has been introduced. It may be seen that:

- 1) The degree of saturation of exchangeable calcium in the Suzhou area paddy soil is higher than in acidic paddy soils.
- 2) In paddy soils from the Suzhou area, the >18 percent degree of saturation of exchangeable magnesium occurred in about 86 percent of the total number of analyzed samples, while only being 26 percent in acidic paddy soil.
- 3) The degree of saturation of exchangeable potassium and sodium seemed the reverse of calcium and magnesium with the degree of concentration in a single sample being rather low. For example, 1/6 of the analyzed samples of paddy soil from the Suzhou area had a sodium saturation greater than 4.5 percent while for acidic paddy soil it was about 1/3. The number of samples with exchangeable potassium saturation >2 percent was about half for acidic soil while it was only 1/25 for Suzhou paddy soil. The reason for paddy soil being this way may be related to frequent applications of plant ash.

Additionally, among the rice paddy soils of the Suzhou area, differences are not great in the composition of exchangeable base of rice paddy soils from places with different topography.

The ratio of exchangeable calcium to magnesium is not the same for Suzhou area paddy fields and acidic paddy fields. The number of samples from the former with a ratio ≤ 4.5 amounted to 94 percent of the total number of samples, while from acidic paddy fields they amounted to only 60 percent (Table 2). The appearance of this phenomenon seems to be related to frequent applications of limestone (with a calcium content vastly higher than the magnesium content). Consequently, though the calcium saturation is lower than for paddy soils in the Suzhou area, the magnesium saturation is even lower. On the contrary, though the calcium saturation of paddy

1) 表2

不同水稻土的交换性钙镁 (Ca/Mg) 当量比值
(以各比值中样本分布百分比表示)

2) 土 壤	3) 样 本 数	4) 比 值 分 类					
		<1.50	1.51-3.00	3.01-4.50	4.51-6.00	6.01-7.50	>7.50
5) 中性水稻土	81	0	24.0	87.9	4.9	1.3	0
6) 酸性水稻土*	84	13.1	27.4	28.5	11.9	6.0	13.1

Key: 1) Table 2. Equivalent Ratios of Exchangeable Calcium to Magnesium (Ca/Mg) in Different Paddy Soils (expressed as percentages of distribution of samples within each ratio classification)

2) Soil

3) Sample number

4) Ratio classification

5) Neutral paddy soil

6) Acidic paddy soil

rice fields in the Suzhou area is comparatively high, magnesium saturation is even higher than for acidic paddy soil. In other words, the ratio of exchangeable calcium to magnesium of Suzhou area soil is low, the reason possibly being related to a decline in the exchangeable calcium and a rise in the exchangeable magnesium.

Deserving of attention is whether the paddy field soils of Suzhou, which have been regarded in the past as being neutral paddy soils, have shown any tendency toward acidity. During recent years, some places have shown a reaction ranging from mild to strong acidity in some soils (the cultivated layer) from fields with consistently high yields. The results of our analysis also revealed a mildly acidic reaction in the cultivated layer of a minority of fields (pH 5.0 - 5.5). Though the intensity of leaching of Suzhou area paddy soil is nowhere near as great as in the acidic paddy soil of the south, still the soil's exchangeable base, and particularly the exchangeable calcium, shows clear leaching and illuviation in profile (Figure 1). Except for the soils from low-lying paddy fields surrounded by dikes that have not been under cultivation for many years, the cultivated layer of yellow soils in both flatland and high flatland fields usually has a pH value that is lower, on average, than any of the lower layers, demonstrating that after paddy soils have been cultivated for a long time, the exchange base of the cultivated layer of the soil is affected in varying degrees by leaching with a gradually increasing acidity of the soil (i.e. a decline in the pH value). If physiological acidic fertilizers (such as ammonium sulfate, potassium chloride, or ammonium chloride) are applied to field plots without the use of alkaline fertilizers such as plant ashes, the cultivated layer of the soil will very likely become strongly acidic (pH 5.0 - 5.5).

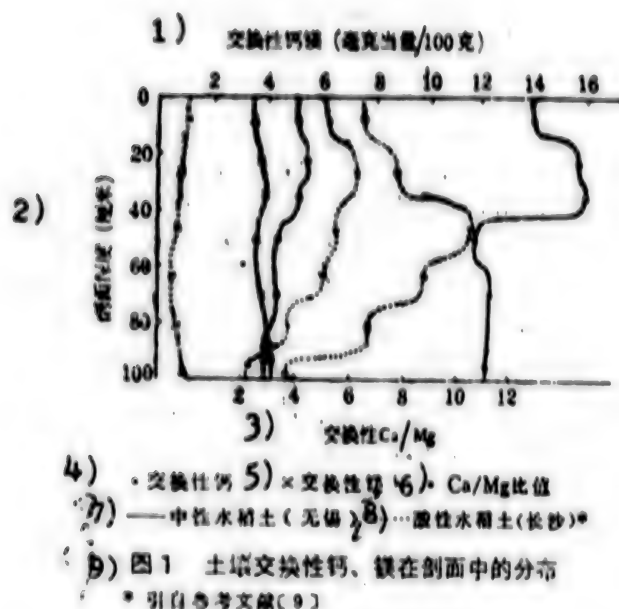


Figure 1. Distribution of exchangeable calcium to magnesium within the profile

Key:

- 1) Exchangeable magnesium (equivalent milligrams/100 grams)
- 2) Depth of profile (centimeters)
- 3) Exchangeable Ca/Mg
- 4) . Exchangeable calcium
- 5) x Exchangeable magnesium
- 6) o Ca/Mg ratio
- 7) Neutral paddy soil (Wuxi)
- 8)Acidic paddy soil (Changsha)
- 9) Figure 1. [Title]

3. Effects of Exchangeable Magnesium On Physical Properties of the Soil

In a comparison of acidic paddy soils, the characteristic of the composition of the exchangeable base of paddy field soil in the Suzhou area seemed to be that the exchangeable magnesium tended to be high and the exchangeable calcium tended to be low. Paddy soils in the Suzhou area show magnesium saturation as being between 13 and 31 percent, which is a difference of almost twofold between low and high. Therefore, the effects of exchangeable magnesium on the physical properties of the soil should be given definite attention.

Already published materials show that the white syrupy soils of poor perirousness in the northeast, the viscosity of the sticky red mud fields

in Yunnan, and the poor structure of the chestnut soils of Lianhu Farm in Jiangsu all seem related to the high amount of exchangeable magnesium and the low ratio of exchangeable calcium to magnesium. In rice paddy fields developed from red soil in the fourth century, the ratio of exchangeable calcium to magnesium increased as the mellowness of the soil increased. In Guangdong Province, the ratio of exchangeable calcium to magnesium in paddy fields of consistently high yields is vastly higher than for paddy fields with low yields, etc. This appears not to be accidental. The ratio of exchangeable calcium to magnesium in Wajian in the Liaocheng area of Shandong Province is very much lower than that of the high colored meadow soils of the same area, and the role of exchangeable magnesium in the formation of alkaline soil and alkali soil is confirmed. In the gray clay pan of the state of Oklahoma in the United States, the ratio of exchangeable calcium to magnesium is very low (1.5 to 1.8). In the "leathery calcareous soils" of Romania, the low perirousness and the high exchangeable magnesium and sodium are not unrelated. As the years of cultivation have increased, the ratio of exchangeable calcium to magnesium of the bog soils of Japan have gone from 0.8 to 0.9 and 4.0. Additionally, the stability of soil cluster or the decline in the coacervation index, as well as the decline in the perirousness properties, are intimately related to the increase in exchangeable magnesium (or sometimes exchangeable sodium), or a decline in the exchangeable calcium to magnesium ratio.

The effect on soil properties of exchangeable magnesium in soil is limited by exchangeable calcium and sodium. The "ratios" used above reflect this point. Experiments show that the effects of exchangeable magnesium on soil absorption of water, its degree of dispersal, expansion and perirousness are controlled by the existence of and the ratios of exchangeable calcium and sodium, and sometimes the same role is played with exchangeable sodium, and sometimes it is similar with exchangeable calcium. The degree of dispersal, expansion or expansion pressure, shrinkage, coacervativeness, and lower limits of plasticity are fairly great and lie between those of calcium soil and sodium soil.

In the stiff paddy soils of the Suzhou area, the saturation of exchangeable magnesium and sodium is fairly high, while the saturation of calcium is fairly low (Table 3).

The ratio of coarse pore space to total pore space in stiffened paddy soil is rather low. Though the factors bearing on coarseness or fineness of pore space are fairly complicated, the results of analysis show that the soil's exchangeable magnesium and sodium saturation (x), and the percentage of air-filled pores to the total pores (y) at the time of pF_2 , produces a fine negative correlation ($r = -0.728$, $n = 15$, $p < 0.001$), and its regression equation is: $y = 45.5 - 1.1 X$. Under natural water content conditions (i.e. pF is different), the above relative tendency also exists. (Figure 2)

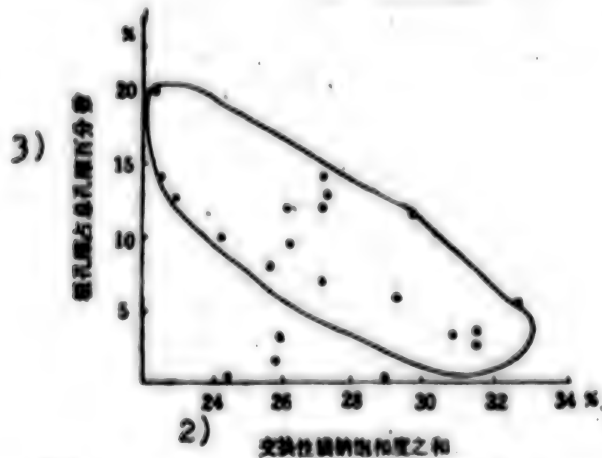
1) 表3 僵土和松土的交换性盐基饱和度的差别
(以样本分布%表示)

2) 土 壤	4) 交换性钙		5) 交换性镁		6) 交换性钠	
	3) <75	>75	<22	>22	<4.5	>4.5
僵土(23)	91.3	8.7	39.1	60.9	65.3	34.6
松土(26)	57.7	42.3	65.4	34.6	80.8	19.2

7) 注: 僵土——发硬未耕土, 松土为其对照; () 内数字为样本数。

1) Table 3. Differences in Stiff Soils and Loose Soils of Exchangeable Base Saturation (expressed as percentage of distribution in samples)

- 2) Soil
3) Positive ion saturation (percent)
4) Exchangeable calcium
5) Exchangeable magnesium
6) Exchangeable sodium
7) Note: Stiff soil means stiffened paddy soil; loose soil means the opposite; numbers with parentheses () are sample numbers.



1) 图2. 镁、钠饱和度和对粗孔隙比例的影响
(自然含水条件下)

Figure 2. Effect of magnesium and sodium saturation on proportion of coarse pore space under natural water content conditions

Key:

- 1) Figure 2 [title]
2) Sum of saturation of exchangeable magnesium and sodium
3) Percent of coarse pore space relative to total number or pore spaces

However, the total porosity of wind-dried soil is not affected by the saturation of exchangeable magnesium and sodium, but presents a definite positive correlation ($r = 0.490$, $n = 31$, $p < 0.01$) with the gram molecular ratio of exchangeable calcium to magnesium, and calcium to sodium and ($\text{Ca/Mg} = \sqrt{\text{Ca/Na}}$). Additionally, this ratio and the compressive strength of dry lumps of soil (paddy soil from flatlands or high flatlands) makes a fine negative correlation ($r = -0.698$, $n = 21$, $p < 0.001$).

Conditions bringing about an increase in exchangeable magnesium are complex but a few clues may be provided for exploration. The foregoing stated that there was an almost twofold difference in the exchangeable magnesium saturation in paddy soil from the Suzhou area, and soils exhibiting rather high magnesium saturation must be regarded as having a high probability of being stiff paddy soil; even though this kind of soil is usually in rather wet conditions during the early crop period, this provides an important condition for increase in exchangeable magnesium. Secondly, when the sum of the gram molecular ratio of exchangeable calcium, magnesium, and sodium is less than 8.0, it tends toward a negative correlation with the soil's organic C/N ratio, (Figure 3), demonstrating at the same time that excessive wetness is a condition that increases the soil's exchangeable magnesium; consequently, within certain limits, the higher ratio of organic C/N is related to the constant state of wetness of the soil. In addition to the weathering of ores containing magnesium that releases magnesium ions into an exchangeable state, magnesium seems to derive in many areas from the water used in irrigation. This point has been discussed in preliminary study of the problem of salt efflorescence on the earth's surface.

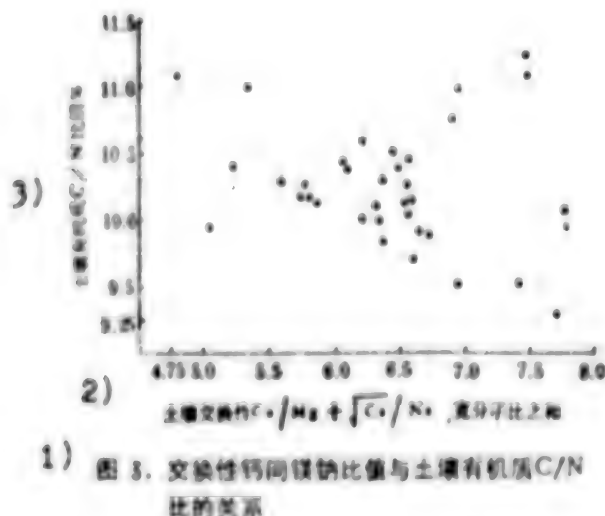


Figure 3. Relationship of the proportion of exchangeable calcium to magnesium, and calcium to sodium to the ratio of organic C/N in soil

Key:

- 1) Figure 3 [title]
- 2) Sum of ratio of gram molecules of exchangeable $\text{Ca/Mg} + \sqrt{\text{Ca/Na}}$.
- 3) Percentage ratio of organic C/N in soil.

4. Summation

The exchangeable base composition of paddy field soil in the Suzhou area is characterized by a tendency toward high exchangeable magnesium as compared with the acidic paddy soils of the southern regions. Furthermore, this characteristic is reflected in a rather concentrated way in stiff paddy soils. The physical properties of some soils are affected by the saturation of exchangeable magnesium (or sometimes sodium), and exchangeable calcium plays a restraining role on the effects of magnesium under certain circumstances. When large amounts of physiologically acidic fertilizers are applied to plots, unless applications of alkaline fertilizers are also made, there is a good possibility that the soil will become acidic.

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9437

CSO: 4007

JIANGSU

BRIEFS

JIANGSU STATE-RUN ENTERPRISES--In 1979, 12 state-run agricultural, forestry, animal husbandry and fishery enterprises directly under Nanjing Municipality delivered to the state some 10 million jin grain, 8 million jin of fresh milk and nearly 5 million jin of fruit. [Nanjing Jiangsu Provincial Service in Mandarin 2300 GMT 20 Apr 80 OW]

CSO: 4007

CALCULATION OF PRICE OF GRAIN RATIONS TO COMMUNE MEMBERS QUESTIONED

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 2,
5 Nov 79 p 18

[Article by Cheng Guangdong [4453 0342 2767] of the Jiangxi Gan County
Agricultural Bureau]

[Text] After the state purchasing price of grain is raised, how will the price of grain rations distributed to commune members be calculated? To answer this question, we visited a production team and conducted an informal discussion.

The arguments for computing the price of commune members' grain rations on the basis of the state selling price (the original price) are: 1. The farmers are the grain producers. The price that commune members have to pay for their personal rations of the grain that they produce and consume should be lower than the price that non-producers have to pay for their grain rations. 2. This basis for calculation would not increase the financial burdens weighing on families of martyred soldiers with few workers and many mouths to feed, families with financial difficulties, and dependents of staff and workers, by putting them in debt. 3. If the price of grain rationed to commune members is computed on the basis of original price, the distribution figures would accurately reflect increases in income when production is up.

The arguments for calculating the price of commune members' grain rations on the basis of the state purchasing price are: 1. Raising the cash value of workpoints, thus raising the income of those who earn more of them, would serve to arouse the enthusiasm of the work force. 2. Making the buying and selling prices identical would make accounting and calculating simpler than would otherwise be the case. 3. This basis for computation would be conducive to family planning.

Both positions have validity. Balancing advantages and disadvantages, I favor retaining the state selling price as the basis for calculation. If the price of grain rationed to those who produce and consume it is higher than the price of commodity grain, peasants will not understand it readily because of old practices and sentiments, and such a state of affairs will

not help reduce the differences between industry and agriculture, and between town and country. Also, the state's purpose in raising the purchasing price of grain is to benefit all or most of the peasants. If the price of grain for the farmer's own consumption is raised as well, the principal beneficiaries will be peasant households with most members employed and few dependents. The burden on families in difficult circumstances with many dependents and few working members will be increased. If the state selling price is retained as the basis for computation, everybody will be satisfied, and families with most of their members employed will not have less income. Because the price at which production teams sell surplus grain to the state is to be raised, the value of work points will consequently be increased. Moreover, families with most of their members employed will receive a larger grain ration without paying more for it, and they will still be the principal beneficiaries without suffering losses. Furthermore, the increase in the state purchasing price of grain and the accompanying increase in peasants' income call for a correct understanding, and the real situation should be: The revenues of those production brigades that increase their sales of surplus grain to the state (and thus increasing their contributions to the state) will increase; the earnings of production teams that don't sell surplus grain or other agricultural products to the state cannot and should not show increases as a result of raising the state purchasing prices of grain or other agricultural products. If the figures show that peasants are deriving an increase in revenues from a rise in the price of grain rations, it is in reality a false, superficial phenomenon.

9292

CSO: 4007

COTTONFIELD CULTIVATION IN JIUJIANG PREFECTURE READJUSTED

Beijing RENMIN RIBAO in Chinese 12 Feb 80 p 2

[Article: "Cottonfield Cultivation Readjusted in Jiujiang Prefecture"]

[Text] According to a report by JIANGXI RIBAO, Jiujiang Prefecture has conscientiously summed up experienced in cotton farming, and set a target for cotton yield for this year.

Last year the 20 key production units of Jiujiang Prefecture were all concentrated in the cotton-planting communes occupying nearly 240,000 mu of land, with the total output of over 250,000 dan and with 109 jin of ginned cotton per mu yield. Although occupying an area of over 290,000 mu, those sparsely scattered cottonfields only had a total output of over 190,000 dan, which amounted to only 59 jin per unit yield. Finally, the prefecture party committee and the administrative office decided to adapt the cottonfield cultivation to specific local conditions. As a result of readjustments, the total area of cottonfields in the prefecture, ranging from the sparsely scattered to those densely planted, has now reached more than 52,000 mu, thus turning it into a practicable cotton farming project. Cotton growers in Duchang County have planted anew other more suitable crops at the former site of those easily flooded and dried cottonfields on the hilltops and by the lakes, and more than 30,000 mu of high-yield fields have been newly designated for cotton. Across the prefecture 620,000 mu of land has been designated for cotton growing through the implementation of the national cotton production plan with an increase of 100,000 mu of cotton-bearing land over last year.

In the cotton growing fields in Jiujiang Prefecture, 143 irrigation and drainage pumping stations have been set up; a winter pest-extermination drive has been completed across the prefecture. With over 1 million jin of fine varieties imported from other prefectures and 4.6 million jin redistributed from local high-yielding communes and brigades, 80 percent of the prefecture's communes and brigades are now finally able to plant new improved varieties.

JILIN

BRIEFS

HOG PROCUREMENT--In the first 3 months this year, the food and commercial departments of Jilin Province procured 60 percent more hogs and had 180 percent more pork in stock than in the same period last year. In view of this the provincial commercial bureau issued a circular on 29 March to call on various municipalities, counties, towns, factories, mines and forest areas to temporarily suspend restrictions on marketing of pork. Food procurement stations in rural areas should procure and slaughter hogs and market some of the pork on the spot so as to enable the peasants to have more pork to eat. The circular also stressed that no commercial department is allowed to stop or postpone hog procurement or to set prices for procurement or marketing arbitrarily. [Changchun Jilin Provincial Service in Mandarin 2200 GMT 1 Apr 80 SK]

CSO: 4007

NEI MONGGOL

BRIEFS

WHEAT SOWING--By the end of March, Nei Monggol region had planted wheat on 886,000 mu of land. [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 3 Apr 80 SK]

CSO: 4007

HUANGZHONG COUNTY STRESSES PREPARATORY FARMING TASKS

Beijing RENMIN RIBAO in Chinese 4 Feb 80 p 2

[Text] QINGHAI RIBAO reports: After the beginning of winter last year, the various party organizations of Huangzhong County of Qinghai Province concentrated on the work of preparation. With the coordinated efforts of cadres and masses, the preparation work has produced fruits throughout the entire county. Compared with last year, more farm fertilizer has been accumulated and more seeds are in storage. The acreage of winter soaking is much larger. The reason for the relatively better preparation work in Huangzhong County this year is mainly due to the following:

- 1) The party committees of various levels have paid attention to the guidance of farming preparation work. As soon as harvest and threshing came to a close last autumn, the county committee immediately dispatched an announcement concerning winter production preparation work. The various communes were asked to do the preparation work concretely. In the middle of December, groups were organized to carry out a thorough survey of the preparation work in Zongsai, Dacai, and Haizigou counties. Problems of these communes and brigades were resolved in good time with the assistance of these work groups. Most recently, an extended county committee meeting was called and the party secretaries of the various communes attended. The existing and outstanding problems were discussed and a special study of the preparation work of the entire county was carried out at the meeting.
- 2) Last year, there were some initial internal readjustments in some communes of Huangzhong County, and some sweet results have just been tasted. This year, in the process of formulating the agricultural production plan, there was a general readjustment in all the communes. Attention was given to farming preparation in accordance with the requirements of the readjustment. Weak links of each commune and brigade were given special attention. When there was a scarcity of farm and chemical fertilizer, the work was concentrated on obtaining fertilizer. When the seeds were of poor quality, the work was concentrated on selecting good seeds. When the problem was disease and pests, the work was concentrated on soil treatment. There was special attention to not depending upon chemical fertilizer alone. Attention was also given to farm fertilizer and manpower was organized to accumulate farm fertilizer. The quantity of accumulated farm fertilizer in the county increased and the quality was better than the year before.

3) Last year, not a few communes and brigades suffered calamities. The seeds harvested for this year's planting are therefore of poor quality. Based on this condition, exchange of seeds among the various communes and brigades has been made an important task in farming preparation. For example, Lanlong Commune selected and kept 1.78 million jin of wheat seeds in order to supply superior seeds needed by all for planting.

4) After farming preparation began last winter, the various communes of the county immediately worked on water supply in consideration of the fact that in this region spring is dry in 9 out of 10 years. At present, as much as 60,000 mu in the county have been filled with water. At the same time, some small engineering projects that will function quickly are being constructed. Efforts are being exerted to dig and to tunnel in order to enlarge the irrigated paddy acreage to 10,000 mu before the seedling time. Last year, the Yunguchuan Reservoir stored 4 million m² of water. Today, it has stored more than 5 million m² of water. Lijiashan Commune which is located in the Yunguchuan Reservoir irrigation area has leveled 1,900 mu of land and constructed 2 km of channels. There are also four automatic pressure spraying stations which will make it possible to enlarge the irrigated acreage another 800 mu.

6168

CSO: 4007

LING COUNTY PLANS COTTON CROP

Beijing RENMIN RIBAO in Chinese 4 Feb 80 p 2

[Text] DAZHONG RIBAO reports: The Chinese Communist Party County Committee for Ling County, Shandong Province made plans early because of its determination to reap a new cotton harvest this year. Beginning a year ago, the committee members concretely mobilized thinking and worked to have materials and capital ready to carry out the policy. The comrades in charge of the county committee first helped the advanced communes and brigades. Then, they proceeded with a production responsibility system. Communes and brigades that were having problems were given assistance to implement the policy and plant the cotton crop well. Guandaosun Commune had been producing only grain for many years. The grain yield could not be made higher while the cotton yield was low. The county committee helped the commune party committee to propagandize and implement the party's policy of planting cotton and to improve crop management. The commune had originally planned to cultivate 4,000 mu of cotton. Now, the acreage has been increased to 6,000 mu.

With the help of the county committee, the county's department of industry has designated production units to make planting tools. The department of supplies has bought more than 5,000 sprayers. The department of agriculture is planning to offer classes to train a staff of cotton production technicians. At present the plan to cultivate 230,000 mu of cotton has been carried out to the stage of having brigades and fields completely designed and 2.3 million jin of seeds of the superior cotton breed of Lumian No 1 are also ready. After the winter plowing of all the cotton fields was completed, an additional 70,000 mu of high yield areas were assigned. The various communes and brigades plan to apply 6,000 tons of phosphorus fertilizer in these cotton fields; more than 1,600 tons of the fertilizer have been delivered to the communes and brigades.

6168

CSO: 4007

BRIEFS

SHANDONG SCIENCE POPULARIZATION--Comrade (Li Fan), deputy director of the Shandong Provincial Scientific and Technological Commission, recently gave a speech to reporters on the question of how to promote and effectively popularize the agricultural scientific and technological findings in production across the province. In his speech, Comrade (Li Fan) brought forward the following demands in line with the general situation of the province: 1) It is necessary to do an even better job in preserving outstanding grain strains and in popularizing the breeding of such strains; 2) It is necessary to grasp well the popularization and application of the advanced techniques; 3) Attention should be paid to cultivating green manure so as to be beneficial to farming soil and to applying manure in a scientific way; and 4) It is necessary to vigorously popularize the achievements of scientific research in improving the salinity and alkalinity of the soil and in preventing various natural calamities. [Jinan Shandong Provincial Service in Mandarin 2300 GMT 6 Mar 80 SK]

COTTON ADVISORS--An advisory group for cotton production has been formed in Shandong Province. The group is composed of experienced technicians and 15 experts in cotton production. They will make field inspections in various major cotton-growing areas and offer suggestions on how to increase cotton output. [SK240352 Jinan Shandong Provincial Service in Mandarin 2300 GMT 21 Apr 80 SK]

CSO: 4007

SHANGHAI

SHANGHAI BUSY WITH SPRING FARMING

Shanghai WENHUI BAO in Chinese 21 Mar 80 p 1

[Article: "Shanghai Suburbs in the Throes of Spring Plowing and Production Fervor. Valiant Fight Against Low Temperatures and Rainy Weather to Gain Bumper Harvest In Agriculture"]

[Text] The prelude to great activity in spring plowing and production has already begun in the Shanghai suburbs. The broad masses of cadres, commune members and farm workers are in place to stave off calamity, resolved that while they are tending the summer-ripening crops in the fields they will also do a first rate job in completing the sowing of early rice, corn, and cotton to garner a fine harvest this year in grain and cotton production.

Ever since the lunar new year, low temperatures and rainy weather has prevailed, bringing many difficulties to spring plowing and production in the suburbs. Two attacks of very cold weather at the end of January and in early February, in particular, caused freeze damage in varying degrees to the wheat, millet, barley, and rape as well as to the green manure.

To counter these detrimental factors, the broad masses of cadres, commune members and farm workers adopted the fighting slogan, "Take spring plowing and production as the core; tend the summer ripening fields well, and use all means to gain a bumper harvest from the summer ripening crop." They set to work early and moved quickly. In mid-February the cadres and commune members of the Caojing Commune in Jinshan County made a crash effort in tending the commune's wheat, millet, barley, and rape. In Chongming County, more than 2400 production teams set in motion more than 68,000 workers to tend the fields with summer ripening crops and to engage in spring plowing and production. The broad masses of commune members gave attention to repair of the ditch system in fields where summer-maturing crops were growing to prevent the threat of waterlogging, and to reducing damage from diseases and pests, while at the same time giving supplementary feedings of fertilizer at the right times to wheat, millet, barley, and rape to produce large heads with heavy grains. Now that the workers and cadres at suburban farms have finished applying fertilizer to the wheat, millet, barley, and rape, they are cleaning up and fixing ditches to drain accumulated water away from the fields.

As part of this year's spring plowing and production, the broad masses of cadres and commune members made a great mass campaign to accumulate fertilizer and make fertilizer, so as to accumulate enough fertilizer from rural families for use on the early paddy rice and cotton. The Fengxian County CCP Committee analyzed this year's insufficiency of green manure, cotton cake, and pig manure, and capsulized the experiences of recent years of advanced units in the suburbs in gaining increased production through large accumulations of natural fertilizer, thereby improving the understanding of the broad masses of cadres and commune members. Quite a few communes and brigades started a mass collection of river mud with fixed tasks, fixed times, and fixed rewards. The Zhonggu Commune in Qingfu County drew benefit from its great accumulations of natural fertilizer. This year it set about the task even earlier, and before the lunar new year it had accumulated more than 3.5 million dan of river mud. A river mud slurry averaging 200 dan per mu was applied to the more than 17,000 mu of wheat, millet, and barley in the entire commune. Another effort was made following the lunar new year, and now the entire commune has completed its task of collecting fertilizer for more than 7000 mu of early rice.

At the present time, in every county in the suburbs spring plowing and production, and tending the fields of summer maturing crops has been placed on the important agenda of every county CCP committee. The Qingfu County CCP Committee has cut the number of meetings and the amount of paper work required and liberated basic level cadres from attendance at meetings and a pile of documents, so as to plunge into the front line of spring plowing and production. Leading cadres of the county CCP committee work together at spring plowing and production with the ordinary masses and commune members. The Nanhui County CCP Committee has transferred four deputy secretaries and cadres from leading organizations to four communes to struggle there alongside cadres and commune members. The CCP committees and municipal farm bureaus in Songjiang and Fengxian counties trained agricultural technicians before the onset of the busy season in spring plowing so that they would be able to play a greater role in spring plowing and production.

9432

CSO: 4007

SHANGHAI

SHANGHAI

FERTILIZER, FARM CHEMICALS--The Municipal Agricultural Means of Production Company has sent supplies used in farming such as chemical fertilizers, pesticides, and plastic sheets to rural villages in suburban counties in support of spring plowing and production. As of the end of February, the company had shipped more than 167,000 tons of nitrogenous fertilizer, an increase of 17.6 percent over the same period last year. It has also shipped more than 30,000 tons of phosphate fertilizer, for an increase of 36.2 percent over the same period last year; and 3.35 million yuan worth of pesticides, for an increase of 36 percent over the same period last year. While doing a good job of supply, that company also actively launched scientific research work. This year it has specially allocated almost 3000 yuan as expenses for experiments on pesticides, and is preparing to conduct experiments in cooperation with 30 basic level units on the effectiveness of new pesticides in an effort on behalf of suburban counties to get consistently high agricultural yields and reduce farm costs. [Text] [Shanghai JIEFANG RIBAO in Chinese 26 Mar 80 p 3] 9432

CSO: 4007

COMMUNE, BRIGADE RUN ENTERPRISES RAPIDLY GROWING

Beijing RENMIN RIBAO in Chinese 12 Feb 80 p 2

[Article: "Commune- and Brigade-run Enterprises Rapidly Developed in Zhejiang Province"]

[Text] Hangzhou, February (XINHUA)--As reported by XINHUA reporter Liu Gongwu [0491 0361 2976]: Again in 1979, commune- and brigade-run enterprises in Zhejiang Province gained rapid growth through "readjusting, restructuring, consolidating and improving."

Zhejiang has always been called the "silk capitol." According to the official statistics, at present in the entire province there are 74 commune-run silk mills annually producing 1,365 tons of raw silk, which account for 20 percent of the province's total, and a total of 235 commune-run silk-weaving plants, annually weaving 10.29 million meters of silk fabric and 820,000 quilt covers that all have a ready market at home and abroad.

Being a farming province, Zhejiang is particularly noted for its commune- and brigade-run enterprises as developed around agriculture. The vast majority of the people's communes of the province have set up farm machinery repair and manufacturing plants with an annual output of over 14,000 pieces of agricultural machinery and 11 million pieces of farm machine parts; the phosphate fertilizer annually processed by the 1,155 commune- and brigade-run chemical enterprises comprises 18.3 percent of the province's total. With subsidiary farm products as their raw materials, all kinds of commune- and brigade-produced light industry items are found everywhere, with an annual output value exceeding 533 million yuan. In addition, expansion of the commune- and brigade-run enterprises have supplied farming industry with large funds; last year over 120 million yuan deriving from the annual income of the commune- and brigade-run enterprises were used to support capital farming construction, purchase farming machinery, aid those poor teams and brigades, and improve the collective welfare services.

BRIEFS

COTTONSEED CAKE AS FEED--Hangzhou, 12 Apr--A new way has been found to remove phenol from cottonseed cake. This makes it possible for cottonseed cakes, previously used as fertilizer, to become feed for pigs. The new process was worked out by Professor Liu Fuguang of the Wuxi Light Industry Institute, with the help of Chen Jinxi, a technician at the Chao Cottonseed Oil Factory in Zhejiang. Professor Liu has been invited to attend a world conference in New York scheduled for later this month. The two men worked on the project for almost a year. They established a workshop in the Chao factory where they conducted their experiments, and it turned out to be a success. As a result of their efforts, the workshop produces 15 tons of cottonseed cake with little phenol a day. Zhejiang Province produces 30,000 tons of the cake each year. Experts estimate that by converting these refined cakes into pig feed, an extra 400,000 pigs can be raised each year. [Text] [Beijing XINHUA in English 1208 GMT 12 Apr 80]

CSO: 4007

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TABLE OF CONTENTS OF 'ZHONGGUO SHOUYI ZAZHI', OCTOBER 1979

Beijing ZHONGGUO SHOUYI ZAZHI [CHINESE VETERINARY MEDICINE JOURNAL] in Chinese No 10, Oct 79 inside front cover

[Text] Survey Study

- Study of Culture of Baby Pig Kidney (BPK IV) Passaged Cell System...
Liu Fuan [0491 4395 1944] of South China College of Agriculture.....1
- Experimental Immunization of Baby Chicks With F Strain Newcastle Low
Virulence Virus...Hu Jiaji [5170 0857 7535] et al of Veterinary
Drug Monitoring Center, Ministry of Agriculture.....4

Integrated Chinese Traditional and Western Medicine

- Medicinal Herb Bacteriostasis Experiment for Treatment and Control
of Pig Streptococcosis...Leshan District Center of Agricultural
Sciences, Sichuan Province.....9
- Experimental Observation of Coordinated Prescriptions of Traditional
Herbs According to the Theory of Opposition and Supplementation...
Beijing Military District Veterinary Medicine Treatment, Preven-
tion, and Inspection Center.....11

Scientific Exchange

- Pathogenesis of Mycosis...Chen Zhiping [7115 1807 1627].....14

Comprehensive Discussion of Literatures

- Problem of Stress in Animals and Its Significance in Veterinary
Medicine...Li Fanping [2651 5672 1627] et al of Department of
Animal Husbandry, Fujian College of Medicine.....15
- Structure and Function of the Lung in Mammals...Lao Ke [5012 0344]
of Department of Animal Husbandry and Veterinary Medicine,
Fujian College of Agriculture.....19

Experience Exchange

Experiment With DWP as Anthelmintic Against Sheep nose Fly Larvae... Fei Cheng [1014 6134] et al of Animal Husbandry Station, Lingwu County, Ningxia.....	27
Understanding in Coordinated Surgical and Nonsurgical Aid for Sows in Difficult Birth...Hou Shaoru [1186 4801 0320] of Nongan County Veterinary Hospital.....	29
Delivery of Difficult Birth With Animal Laying on Its Back... Bai Fengyi [Zhaoguang Farm, Belan County, Heilongjiang Province....	29
Treatment of Disease of Refusing to Eat in Female Donkey About to Give Birth A Mule...Wu Yongsheng [2976 3057 4141] of Xuanhua.... County Veterinary Station.....	30
Treatment of Fistula in Horses...Feng Jiaxi [7458 1367 3556] et al of Shishan Animal Breeding Farm.....	30
Potassium Permanganate Produces Good Effect for Treatment of Pro- tracted Enteritis in Large Domestic Animals...Tian Gengqin [3944 5087 0530] of Beipiao County Veterinary Station, Liaoning Province.....	31
Yadansi [Brucea javanica (L.) Merr.] for the Treatment of Bovine Skin Papilloma...Song Hualeng [1345 0553 2807] of Animal Husbandry and Veterinary Medicine Office, Sansen County, Zhejiang Province...	31

Clinical Data

Recognition of a Series of Diseases in Sows Induced by Vitamin E and Trace Element Selenium Deficiency and Their Preventive and Control Measures...Li Chen [2621 3089] of Fengtai District Bureau of Animal Husbandry and Marine Products, Beijing.....	32
Hypoglycemia of New Born Piglets...Song Qinglai [1345 1987 0171] et al of School of Animal Husbandry and Veterinary Medicine, Shandong Province.....	35
Application of Muscle Relaxant to Deer During Antler Sawing, Ob- servation of an Experiment...Li Jiangxian [2621 4829 0341] of..... Baiquan County First Breeding Farm, Heilongjiang.....	37

Public Health Inspection in Veterinary Medicine

Preliminary Report of Test on Agricultural Drug Residue Degradation in [Chicken and Duck] Eggs...Zhou Guoliang [0719 0948 5328] of Changsha Frozen Feeds Processing Plant.....	39
--	----

Scientific Activity

Notes on the Discussing Meeting of Basic Scientific Fields of Veteri- nary Medicine...Yan Nanping [7051 3352 1627].....inside back cover	
---	--

TABLE OF CONTENTS OF 'ZHONGGUO SHOUYI ZAZHI', NOVEMBER 1979

Beijing ZHONGGUO SHOUYI ZAZHI [CHINESE VETERINARY MEDICINE JOURNAL] in Chinese No 11, Nov 79 inside front cover

[Text] Survey Study

- Safety and Immunization Effect of Oral Administration of Brucella Abortus Swine No 2 Vaccine to Pregnant Sheep...Li Bibo [2621 4310 3134] et al of Neimenggu Institute of Prevention and Control of Endemic Diseases.....1
- Observation of Effect of Application of Brucella Abortus Swine No 2 Vaccine in Controlling Abrupt Epidemic of Brucellosis in Dairy Farms...Li Bibo [2621 4310 3134] et al of Neimenggu Institute of Prevention and Control of Endemic Diseases.....4

Integrated Chinese Traditional and Western Medicine

- On Western Diagnosis and Symptomatic Diagnosis in Veterinary Medicine ...Yang Yingwu [2799 2019 2976] et al of Taizhou School of Agriculture, Zhejiang Province.....7
- Experiment With Acupuncture for the Treatment of Infertility of Sows ...Zhang Yumen [1728 0151 2773] et al of Chinese Traditional Veterinary Medicine Teaching and Research Group, Sichuan College of Animal Husbandry and Veterinary Medicine.....10
- Experimental Treatment of Infertility in Sows With Electrical Acupuncture....Tongzi County Animal Husbandry and Veterinary Medicine Station, Guizhou Province.....12

Clinical Data

- Winter Dysentery of Dairy Cows...Wang Yuanlin [3769 0337 2651] et al of Nanjing College of Agriculture.....15
- Research on Hoof Diseases of Dairy Cows in Nanjing Region...Zhang Youcheng [1728 1635 2052] et al of Nanjing Zhongshan Dairy Farm...16
- Report of Diagnosis of Malignant Edema in Pigs...Wang Guiyun [3769 2710 0061] et al of Xizang Autonomous Region Animal Husbandry and Veterinary Medicine Brigade.....20

Research on Swine Infectious Atrophic Rhinitis...Jiang Zeshi [1203 3419 0037] et al of Jiangxi Provincial Domestic Animal Epidemic Prevention and Inspection Station.....	22
Report of Surgical Treatment of Lithiasis of Urinary Tract of Hogs in 41 Cases...Hugua Commune Animal Husbandry and Veterinary Medicine Station, Tongzi County, Guizhou Province.....	26
Clinical Observation of 100 Cases of Constipation in Horses and Mules Treated With Electrical Acupuncture of Vagus-Sympathetic Nerves...Zhu Guoqing [4376 0948 1987].....	28

Experience Exchange

Simple Method of Obtaining Horse Bone Marrow From Sternum...Horse Bone Marrow Biopsy Research Team, Zhalantun School of Agriculture and Animal Husbandry.....	31
Improved Six-post Holding Frame...Zhang Jiaqiang [1728 0502 1730] et al of Pangcheng County Veterinary Hospital, Heilongjiang.....	33
Treatment of Hematopenia of Studhorses...Feng Jiaxi [7458 1367 3556] et al of Shishan Breeding Farm, Liaoning Province.....	34
Report of Goat Congenital Brain Polyccephalous larva Disease and 5 Cases of hypodermic Muscle Polyccephalous larva Disease...Chen Gaoxian [7115 5021 3759] et al of Ling County Veterinary Hospital.....	35
One Case of Cortisoni Acetici Hypersensitivity in Calf...Shi Zili [2514 5261 0500] of Sanbao Veterinary Hospital, Hulan, Jiangsu.....	36
Emergency Rescue of Suffocation in Newborn Piglets...Veterinary Station, Fuding County Bureau of Agriculture.....	36
Reconstruction of Urinary Tract of Bulls...Mo Zhengtian [5459 1767 1131] of Hunan College of Agriculture.....	37
Total Hysterectomy of Cows...Wang Baorui [3769 0202 3843] of Habahe County Animal Husbandry and Veterinary Medicine Station, Xinjiang...	37

Public Health Inspection in Veterinary Medicine

Inspection for Swine Toxoplasmosis...Wang Zhenhua [3769 2182 5478] of Beixinjing Feeding Farm, Shanghai Municipal Food Product Company....	38
--	----

Scientific Activity

Chinese Traditional Veterinary Medicine Experience Exchange and Scientific Research Cooperation Symposium Held in Lanzhou.....	39
National Veterinary Pathology Discussion Meeting Held in Xinjiang.....	40

Books and Magazines Introduced

Brief Introduction of SELECTIONS FROM COLLECTED WORKS OF YUANHENG ON TREATMENT OF HORSES...Liang Zhiming [2733 1807 2494].....	41
--	----

6248

CSO: 4007

TABLE OF CONTENTS OF 'ZHONGGUO SHOUYI ZAZHI', DECEMBER 1979

Beijing ZHONGGUO SHOUYI ZAZHI [CHINESE VETERINARY MEDICINE JOURNAL] in
Chinese No 12, Dec 79 inside front cover

[Text] Survey, Research

- Preliminary Survey of Species of *Eimeria* performans of Rabbits...
Jiang Jinshu [5592 6855 2579] et al of Beijing University of
Agriculture.....1
Report of Research on Hyper Photosensitivity Occurring in
Beijing Ducks...Li Jianshi [2621 4696 2514] of Beijing Municipal
Animal Husbandry and Veterinary Medicine Station.....5

Basic Knowledge of Veterinary Medicine

- Observation of Beginning, Branching, and Distribution of Such Blood
Vessels as Cervical Rib Artery, Arteriae Cervicalis Profunda
in Donkey, Mule, and Horse...Zhang Yulong [1728 3768 7893]
of Henan College of Agriculture.....9

Integrated Chinese Traditional and Western Medicine

- Report of Effect of Treatment of Equine Parasinoidal Abscess Assessed
by X-ray Combined With Clinical Diagnosis.....11
Preliminary Study on Electrical Charge of Abdominal Muscle Caused
by Stomach Contraction...Hu Wenyao [5170 2429 1031] et al of
Sichuan Provincial Public Health Cadre Advance Study College.....14

Clinical Data

- Report of Cases of Swinepox Virus Type Swinepox (Fox-like Disease
of Piglets)...Zhang Shaoqiu [4545 1421 4428] of Xinchuan Cement
Plant, Tongchuan City, Shaan Province.....16
Combined Shi [Shihui-lime] Ming [Mingfan-alum] Powder for the Treatment
of Swine Bacillus Necrophorus...You Xingjiu [3945 5281 3773]
of Lanxi County Suburban Veterinary Hospital, Heilongjiang Province.18
Diagnosis of 8 Cases of Monkey Tuberculosis...Wei Youmin [0604 0645]

3046] of Department of Biology, Shanghai Teacher's College Branch Campus.....	19
Use of "Nitro-chloro-phenol" for the Treatment of Liver Fluke in Water Buffaloes...Zang Yin [5258 1377] et al of Jinyun County Veterinary Medicine Station, Jiangsu Province.....	20
Surgical Treatment of Acute True Stomach Twist of Dairy Cows... Yu Bi [0151 2411] of Hongqi Agricultural and Animal Husbandry Farm, Nanjing Municipal Dairy Company.....	21
One Case of Hypersensitivity to Swine Cholera Vaccine...Jia Keyong [6328 0344 0516] of Quwo County Animal Husbandry and Veterinary Medicine Station, Shanxi Province.....	23
 Experience Exchange	
Experiment on the Use of Egg Yolk to Inspect Chick Diarrhea...Qingdao Chicken Farm.....	24
Cauterization Method for the Treatment of Foot Dermatitis of Domestic Rabbits...Zhang An [1728 2174] et al of Yilan Township Veterinary Station, Yilan County, Heilongjiang.....	25
Introducing Two Types of Home-Made Simple Veterinary Instruments... Liu Defang [0491 1795 5364] of Kaoshan Animal Husbandry and Veterinary Station, Yian County, Jilin Province.....	26
Coagulation Test for Chick Diarrhea Antigen With Chick Pericardial Fluid...Cheng Shaoyang [4453 1421 7122] of Qinhuangdao Animal Husbandry and Veterinary Station.....	27
One Case of Diaphragmatic Hernia of Horse With Intrusion of Intes- tinal Cecum in the Thoracic Cavity...Cui Zhonglin [1508 0022 2651] of Department of Animal Husbandry and Veterinary Medicine, Northwest College of Agriculture.....	27
Report of Prevention and Treatment of Chick Riboflavin (Vitamin B ₂) Deficiency...Gan Menghou [2927 1322 0230] et al of Department of Veterinary Medicine, Beijing University of Agriculture.....	28
Experimental Use of Maocao [Chenopodium album L.] Extractum Liquidum as an Anthelmintic Against Shepherd-Dog Tapeworm and a Report of Its Clinical Application...Miao Liwei [4924 4409 4850] of 151 Regiment Farm, Shihezi District, Xinjiang.....	29
Surgical Treatment of One Case of Soft-fetus of a Dairy Cow... Third Brigade Veterinary Office, Xijiao [West Suburban] Farm, Beijing.....	32
Simple Hemostatic Technique for the Treatment of Broken Horn of Draft Oxen...Jin Longsheng [6855 7893 3932] Zheng Tufa [6774 0960 3127] of Zhongzhuang Animal Husbandry and Veterinary Station, Jianhu County, Jiangsu Province.....	32
Laboratory Finding of Toxoplasma of Pigs...Shenyang Municipal Food Company.....	33

6248

CSO: 4007

END

•

SELECTIVE LIST OF JPRS SERIAL REPORTS

CHINA SERIAL REPORTS

CHINA REPORT: Agriculture
CHINA REPORT: Economic Affairs
CHINA REPORT: Plant and Installation Data
CHINA REPORT: Politica , Sociological and Military Affairs
CHINA REPORT: RED FLAG*
CHINA REPORT: Science and Technology

WORLDWIDE SERIAL REPORTS

WORLDWIDE REPORT: Environmental Quality
WORLDWIDE REPORT: Epidemiology
WORLDWIDE REPORT: Law of the Sea
WORLDWIDE REPORT: Nuclear Development and Proliferation
WORLDWIDE REPORT: Telecommunications Policy, Research and Development

*Cover-to-cover

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